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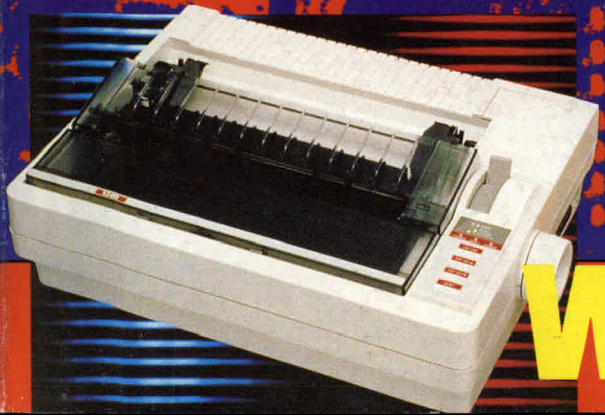
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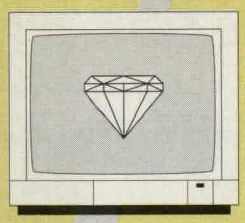
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Contents

Volume 5 No. 4 April 1991

CONSTANT FACTORS

5 *The Amiga Dimension: Antony Jacobson regrets the passing of an Amiga publication but welcomes some Amiga development*

6 *Newsfile: All the news that's fit to print – from hardware to games including the cutting edge of technology*

108 *Amiga answers: Andy Eskelson offers expert advice on your troubling technical issues*

112 *Write To Reply: You make your points of view and Bud Vennos takes his right to reply*

DESK TOP PUBLISHING

19 *Professional Page V2.0: John Walker tests this latest version of the now legendary program, and Jonathan Living offers a second opinion*

24 *Printer of the month: The Fujitsu RX7100PS Postscript laser printer has been dramatically reduced in price. Pat Kelly examines it*

28 *PagestreamV2.1: Jonathan Living investigates this hot DTP package, with a second opinion from John Walker*

32 *TurboPrint: Smart utility to give your printer a boost? Hartmut Schumacher gives you the facts*

34 *7 Deadly Sins of DTP: Hartmut Schumacher supplies some light hearted guidance on how to avoid them and produce heavenly results*

38 *Softclips: With DTP becoming much the rage, Graham Baldock shows what can be done with some neat pieces of clip-art*

MENTOR

44 *Understanding the Amiga – Part 1: The Hardware: All you ever wanted to know and more. Mike Nelson starts this series with a look at what's under the lid – and how to hit the metal in the right place*

106 *AUI Spell Checker: In part 3 Paul Overaa continues this challenging DIY project*

HARD COPY

97 *Getting To Know Your Computer: Daphne Moss reviews this useful book*

TEST DRIVE

46 *Real Things – Human: After examining RT: Horses and Birds, Peter Lee finishes off his look at the trio of animation graphics*

84 *Mega Midget Racer: It's small! It's fast! It's 030! Mike Nelson takes it for a speed-check!*

87 *X-Copy Professional: Back-up your data is what Pat Kelly advises, and he may have found just the utility to do it*

91 *GBRoute: All roads do not lead to Rome, as Pat Kelly discovered*

93 *Byte 'N' Back: Mike Nelson tests this Hard-Drive back-up utility, written by a 17 year old technofreak, and finds it a hot property*

96 *Aztec C Development system: Paul Overaa, musician and programming guru, re-examines this complete C programmers package*

102 *Peggy - the Arpeggiator: Paul Overaa tests this MIDI package which has made its appearance on the Amiga after years of service to C64/128 musicians*

USER PORT

98 *The Price Of Failure: Exactly what is the price of disk failure? John Kennedy attempts to spell out the costs*

104 *The Amiga - with Bells and Whistles: Mervyn Rosenberg takes the down-to-earth view on what to add-on and what the costs are*

SPECIAL OFFERS

47 *My Paint: Exclusive offer to Amiga users of this fun educational program from Prism*

75 *Subscribe: Get AUI through the post and receive a FREE adventure game –Treasure Island Dizzy – and maybe win a cash prize!*

105 *Binder offer: Keep your AUI's clean, protected, and handy*

106 *The Directory: Subscribe to the ultimate guide to Amiga and ST products*

ENTERTAINMENT

48 *Heard It On The Grapevine*
50 *MIG-29 Fulcrum – Domark*
53 *Turrican II – Rainbow Arts*
55 *Robocop II – Ocean*
61 *Chase HQ II – Ocean*
63 *Hard Drivin' II – Domark*
64 *Matching Pairs*
66 *Gazza II – Empire*
68 *Adventure Now! with Andy Moss*
70 *Betrayal – Rainbird*
72 *Colorado – Smash 16*
72 *Super Gridrunner – Smash 16*
72 *Mighty Bombjack – Elite*
72 *The Amazing Spiderman – Empire*
76 *Prince of Persia – Playing Tips*
79 *PD Games Special*
83 *Charts*
83 *Recommended Games*

Titbit: Next month we will be reviewing Expresswork's Dyna CAD, a top of the range Amiga CAD package.

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THE AMIGA DIMENSION

Dear AUI Reader,

Whenever I gather with Amiga users, they generally offer polite compliments on ***AUI***. "I feel comfortable with it . . . I take it home and read it straight away . . . There's always something that makes me go "AH!" . . . It doesn't feel like the other Amiga mags . . . I've read it since I've had an Amiga . . ."

But when I press them to tell me how they would like to see ***AUI*** develop, it's not always easy for them to pin it down. Sometimes, however, almost shyly, I have been told that "It ought to be more like Amiga Times." The late, and often lamented Amiga Times . . . For those who never had the good fortune to encounter it, Amiga Times was a magazine published in Montreal, Canada and largely sold in the U.S.A. It did make a brief appearance on this side of the Atlantic, mostly through computer stores.

It is not because it has disappeared that it arouses strong affection but because it struck a chord in the hearts of its Amiga-owning readership as has no other Amiga magazine. There was a special reason for this.

Amiga Times was created by a band of enthusiasts, according to the masthead quite a large band. It was well-designed and looked very professional. It contained many of the tricks and novelties — graduated tints, multiple colours and lots of photos and other techniques very costly in traditional publishing methods — that are seen now in magazines produced through high quality Desk Top Publishing.

DTP these days, at a professional magazine level, happens mainly on Apple Macintosh computers. They have become the accepted standard. They have been, until recently, expensively credible. And companies involved in colour reproduction, printing, and other processes necessary in publishing are easily able to interface with them.

The difference between Mac-produced publications — a category which I believe includes all the U.K. Amiga Magazines — and the Amiga Times was that the Amiga Times staff did not use Macs. They bravely employed he Amiga for their entire production process. They also used a wide range of Amiga packages such as Professional Page 1.3 that though good were not considered by professional publishers to be of the standard of those available on Macs or really up to producing commercial publications.

The Amigo Times team nevertheless were uncompromising. If it were a magazine covering and lauding the Amiga, then the Amiga must be used to produce it, no matter the time needed — or possibly the cost in manpower, to create the effects they wanted. One story I heard was that it once took 24 hours non-stop computing on their powered up Amigas to output a single full colour page of 24 bit graphics — though no ordinary reader could have told the difference from the conventional publishing methods.

That kind of dedication, rightly, was greatly admired by loyal Amiga Users. It might not have been though a very commercial way of doing things. Time is money . . . Whatever the reason, early last year, Amiga Times hit financial trouble and was closed down.

One of the packages with which they successfully struggled to produce Mac quality magazines was Professional Page, the 1.3 version. In this month's ***AUI***, we carry in-depth reviews of the latest versions of the two top Amiga DTP packages. Professional Page 2.0 and Pagestream 2.1. Both are greatly improved, both these new versions would have made the lives of the staff of the Amiga Times much easier. They are software which can begin to stand against the Mac packages without shame.

At ***AUI*** we are now actively considering how the magazine should develop in today's growing and changing Amiga Dimension, a very different one from the early days when we led the field as the first U.K. Amiga publication. We already use the Amiga to aid production in a number of ways. We are hoping to go much further into incorporating true Amiga technology into our own production. It won't be easy — but we are Amiga loyalists too and gradually we hope to prove it as did the Amiga Times — but without meeting the same sad fate of the last Amiga-produced Amiga magazine.

As software like these excellent DTP packages emerges, so the Amiga will gain growing respect and acceptance of professional users. That will create a market for more and still better software and the Amiga will be increasingly recognised for the outstanding computer it is . . . Lets hope that such a change, which is already under way, will encourage ***all*** Amiga magazines to begin to practise what they preach about using Amigas.

Antony Jacobson
Managing Editor

ADVERTISERS DIRECTORY
(AMIGA USER INTERNATIONAL) APRIL 1991

Ace Repairs	92
Adamsoft	74
Amiga Bandits	86
Amiga Direct	94, 95
Amiganuts	86
ARK	90
Bitcom Devices	74
Byte Back	13
Calco	100
Checkmate Systems	52
Commodore NTL Repairs	33
CYB	90
Datel Electronics	10,11
Delta PI	86
Diamond Computers	IFC,3,4,57,58
Digicom	54
DTP Bureau	97
ESP	100
Evesham Micros	108,109
First Choice	71
Geographic	92
GTI	78
Harwood Computers	40,43
Hobbyte	60
JCL Business Systems	20
Kosmos	97
Magnetic Media	92
Marcam	82
Memory Expansions	62
Newtec	OBC
Nik Williams	90
Omega Projects	78
Rombo	IBC
Silica Shop	49
Siren Software	17
Solid State Leisure	9
Special Reserve	26,27
Supra Corporation	37
Track Computer Systems	73
Trilogic.	65
Voltmace	92
Wizard Software	90
WTS Electronics	67

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JONES IN THE FAST LANE; A TOTALLY NEW CONCEPT IN COMPUTER GAMING FROM SIERRA

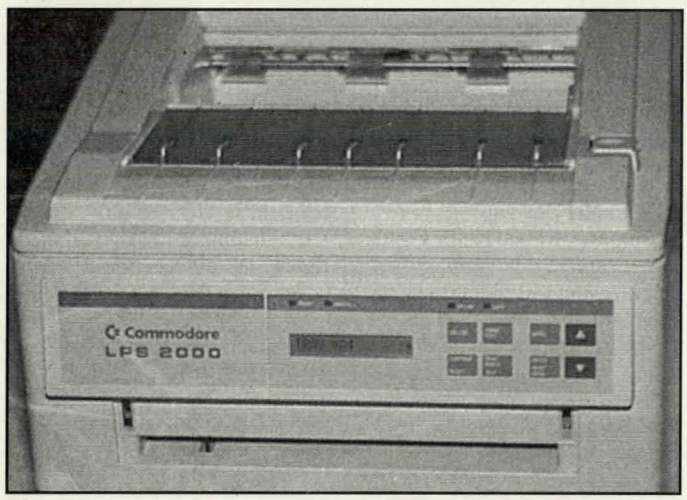
Sierra's - Jones In The Fast lane is a game, Sierra claim, that should be labelled 'Warning: This Game May Be Habit Forming.' Jones is a "real life" adventure driven by ambition and competition for the grand prize in life; success.

Jones is a team-developed, computer board game with multi-player capability. One to four players can challenge each other or a single player can face off against Jones, a wily computer opponent. Players will define and set specific goals in education, career, money and happiness than challenge each other to achieve them first. Players make real-life decisions bedevilled by life's little uncertainties resulting in multiple ending scenarios. (It's an everyday story of Amiga folk like you and me...)

Using point-and-click interface, Jones features digitized animation of live actors that travel around the on-screen game board of Jones' world. Attempting to 'beat the rat race' players will improve their education, get better jobs, even win the lottery; riding high on blue chip stock dividends one minute and hocking their socks at the neighbourhood pawnshop the next. (I told you it was about us!)

Contact: ***Sierra On-Line Ltd, Unit 2 Technology Centre, Station Rd, Theale, Reading Berkshire RG7 4AA.***

NEW CBM LASER?



You haven't seen the LPS 200 Laser printer? Not suprising, this 6 pages a minute machine is only on sale in Germany.

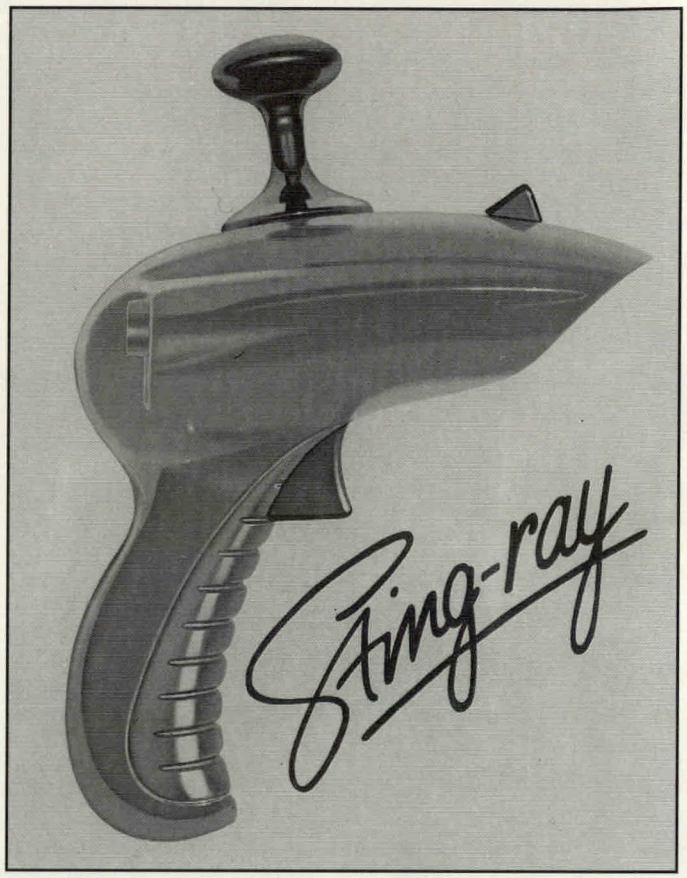
KINGS QUEST V "THE BIGGEST COMPUTER GAME EVER"

Sierra, the U.S. company have now set up a U.K. office and told *AUI* that they are to release 'King's Quest V' woth over 10 megabytes of game data to make King's Quest V "the largest computer game ever", with 256 colour graphics.

Selling over 1,500,000 copies worldwide, the King's Quest series has, Sierra claim, been the most popular adventure game series in history.

The first game to employ Sierras's new 'cinemagraphic' technology utilizing sophisticated Hollywood animation techniques, KQV,say Sierra, is more like an interactive movie than any game on the market.

LOGIC 3 SURFACES WITH STING-RAY



LOGIC 3, the new British joystick manufacturing company formed by Spectravideo, is launching its first product.

The joystick, the Sting-ray, is being claimed by Spectravideo as being "the ultimate" (do they really mean it will be the `ultimate'- the last and will they promise never to produce another? You can bet your Ram expansion they won't! Ultimate! It's ***AUI***'s unfavourite word!)-in hand-held joysticks.

In appearance, the joystick looks like a futuristic space gun,and can be held by either the left or right hand and is fitted with durable microswitches to make it responsive and strong. The Sting-ray is also claimed to be ergonomically designed so that the hand fits comfortably around the handle, enabling the games player to maintain a firm grip even after many hours of alien zapping.

The Sting-ray, like all other as yet unanounced Logic 3 joysyicks, will be manufactured in the U.K.

Spectravideo boss, Ashvin Patel, said "We see Logic 3 as the BMW of the joystick world and the Sting-ray is the ultimate zapping machine" (No Ashvin Patel, not the `ultimate' please!)

HARD TIMES FOR CBM

Rumour has it that Commodore is to lay off between 10% to 15% of its 600-person US work force, to improve profit margins. In addition, it seems, the president of the US subsidiary, Harry Copperman, is to be replaced by James Dionne, who previously headed the company's Canadian company. Copperman is rumoured to have been pushed sideways into a vice-Presidents' job with CBM International. It is believed that there are no plans for similar changes for CBM U.K.

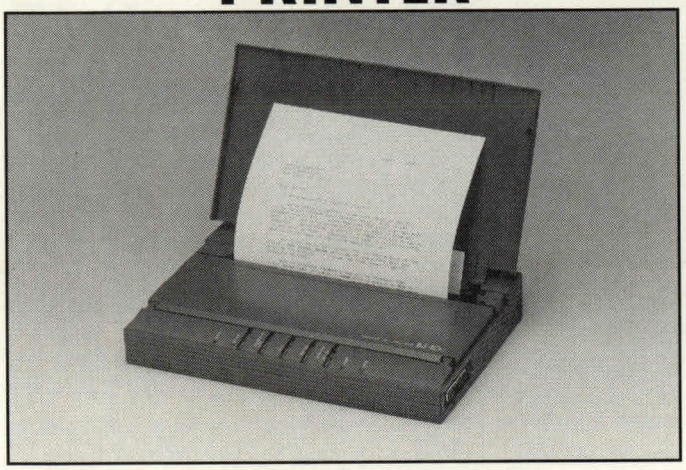
THE VISION CHIP

An image-sensing chip which could cut the cost of making cameras, video security cameras and even new-fangled "seeing toys", has been designed at the University of Edinburgh.

The breakthrough has been in developing a vision chip using the C-Mos technology, the same technology used in today's computer memory chips. Previously, vision systems have had to use expensive charged couple devices, with a range of fancy electronics and power supplies in addition. The Edinburgh chip, which is being sold by VLSI Vision, builds all the electronics onto the one device.

A single chip could cost as little as £12 to the manufacturer, making it ideal for home security cameras, or other areas of "consumer vision".

ACTION'S CHEAPER BJ-10e PORTABLE PRINTER



Cannon's recently announced Bubble Jet BJ-10e portable printer is now available from Action Computer Supplies at £252.00, including Action's two year extended warranty, compared with £345.00 MRP.

The BJ-10e is based round a replaceable cartridge that uses 64 very fine nozzles to provide a resolution of 360 x 360 dpi. It emulates IBM proprinter X24E and Canon BJ-130e, and prints in letter quality at 83 cps. It has a 37KB buffer, 34 KB of which can be used for downloading fonts, and provides Courier and Presige Elite typefaces at 10, 12 or 17 cpi, or with proportional spacing.

"This machine weighs less than 2kg, but still produces remarkably good quality print" says Action's hardware business manager Phil Bowd. "In fact, if you add the optional automatic paper feeder, at £49.50, it is perfectly satisfactory for everyday use in the office".

The BJ-10e can be powered from standard mains supplies, using the AC adaptor supplied as standard, or from a rechargeable battery pack offered with the printer at £36.00.

Contact: ***Action Computer Supplies, Alperton House, Bridgewater Road, Wembley, Middlesex, HAO 1Eh. Tel: 0800 333 333***

INOVATRONICS INOVATOOLS

Busy old Inovatronics are releasing InovaTools 1 v2.0. It is an ingenious set of custom interface routines. InovaTools 1 is for programmers who want to go beyond Intuition in their user interfaces. This package contains, in both linkable C code and system library format, routines for the following : moveable "Drag Gadgets" circular, analog-type "Knob Gadgets" "Pop-Up Menus" which can be placed anywhere in a display, and lots more. Price $99.95 Source Code is now included. InovaTools 1 v2.0 is compatible with Amiga DOS 2.0, as well as the 5.0 versions of the Manx and Lattice compliers. Upgrade now available: $34.95

They also have CAPE 68k - The"Complete Assembler Programming Environment", CAPE68k is an assembler for the serious Amiga developer. CAPE's assembler is extremely fast and its optimizations are "nothing short of amazing" Inovatronics modestly crow ." Couple this with its own custom editor, linker, profiler and modular dissembler and you've got the best in the business!" (We told you they were modest!) $89.95. Current version 2.5.

Contact: ***Inovatronics, Inc. 8499 Greenville Avenue, Suite 209B Dallas, Tx 75231.***

PC MARKET BITTEN BY RECESSION

Recession is biting into PC sales, says market research company Context, as market growth slowed to 3.3 per cent by value in the third quarter of 1990.

This is low growth compared with a 35% increases in the third quarter of 1989. Volume sales for the year ending September 1990 also brought disappointing news, showing a growth of only 6.8 percent.

Context senior partner Jeremy Davis blamed the fall in number of PCs sold on the economic climate in the UK.

"The smaller companies are cancelling orders altogether" he said.

Intel 386-based machines accounted for over half of all PC sales in 1990, with the 386SX contributing strongly to value sales.

VOICE E-MAIL

Lotus is to begin production of a voice controlled e-mail product. Based on Notes, the company's groupware product, it will use so-called "sound blaster" boards,of which Lotus is reported to have been buying hundreds

FOLDING COPIER

Possibly the world's smallest plain paper copier, the Sanyo SFT-50 is designed so that the input and output paper trays can be folded into the machine and it can be stored upright when not in use. It copies up to A4 size and weighs just 11kg. Black, red and blue colour modules are available.

CONCEPT 2000 KEYBOARD

The long awaited Concept keyboard for the Amiga is now available. The Concept 2000 Keyboard is a computer device designed to be used as a substitute for, or alternative to, the conventional qwerty keyboard.

The Concept 2000 consists of a keypad with 128 or 256 user definable keys contained in moulded plastic housing. Using available software, or your own programs, complex routines, graphics and quantities of text or mathematical data can be entered with a single key press, as in a 'macro'.

The Concept 2000 can be operated without specific programming knowledge. Using Think Ltd's Overlay Designer and Manager utility software, the 2000 will support almost all current software packages. Dedicated programming for specific tasks can also be accomodated.

To allow the Concept 2000 to be used for wide ranging applications, the gridded surface of the board can be customised using standard paper sized overlays. These can be readily changed to suit whatever application is currently required.

The Concept 2000 keyboard caters for a wide spectrum of educational needs, with software programs ranging from non-linguistic colour/shape matching to word processing, business management, electronics and robotics. An almost unlimited number of exercises and projects can be followed by using a variety of overlays, often with the same original software.

Price £209.70 ex VAT

Special Education price £178.25 ex VAT

Contact:
The Concept Keyboard Company Ltd., Mooralde Road, Winnel Industrial Estate, Winchester, Hampshire, UK SO23 7RX. Tel:0962 843322

NERIKI COLOUR CODER

"At last your computer information and graphics can be transferred to video at an affordable price" Neriki have told ***AUI***. (Well, reasonably affordable). Previously, the high cost of equipment on the market with this capability, precluded many from its use. The Neriki CE100, its manufacturers claim, "delivers the same capacity as high priced encoders at a fraction of the cost with guaranteed performance, picture quality and definition" - (Really?)

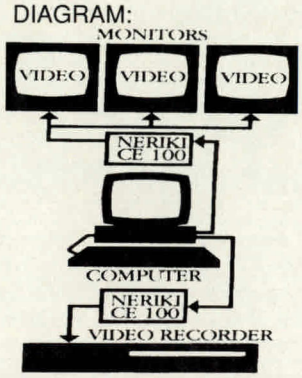
Features: encodes the analogue output signals in colour, from a computer or any source of RGB and sync into composite video or Y-C output.

Available in PAL and NTSC.

C100 Typical applications are:

Graphics, characters, graphs and charts recorded on tape. Disk stored information distributed direct to any number of video monitors (with instant update). Animation stored on tape for storyboard development and presentation. Taped information replay on VCR overcoming the need to transport computer and software.

DIAGRAM:



From the diagram supplied to AUI by Neriki, it looks as if you need TWO not one CS100 ! Affordable- well, about £700 each!

If you've got that sort of cash-

Contact: ***Fordray Manufacturing Pty Ltd., 6 Hawthorne Place, Leewood, Orange NSW 2800 Australia. Tel:6163 62 9901***

GOLD DISK'S HYPERBOOK

Gold Disk, has announced Hyperbook, an application generator that, Gold Disk say, simplifies the process of creating, developing and using personal and business applications, as well as presentations and interactive learning "books".

"Hyperbook is the ultimate Amiga tool for creating and managing information and presentations", Kailash Ambwani, president of the Toronto based software developer told ***AUI***. "Simply by pointing and clicking you can create simple or complex personal, business, and educational applications. The easy to use interface makes it possible to develop your application as you use them. And extensive built-in ARexx support expands HyperBook's capabilities so it can grow with you".

HyperBook provides users with a set of tools that allows them to create applications and presentations such as: personalised appointment calenders, address books, interactive greeting cards, visual multimedia inventory lists, business presentations with interactive charts and graphs, customized teaching "books", and free form interactive educational presentations.

Text, graphics, pictures (IFF), and scrollable lists are quickly created and positioned on "pages" that can be linked to other pages to make a "book". Any item on the page can be made into a button that launches an action, such as showing a picture or displaying additional text. Buttons can also launch DOS and ARexx commands, ARexx macros, or move you to other pages of the book for more interaction.

There are simple visual representations, such as pointing and dragging on a small representation of the page or button to adjust margins. Control buttons are also provided for precise incremental control, giving the new user ease of use and the more experienced user precision. Full Amiga font support is provided, as is the ability to quickly crop IFF pictures and place them free-form on the pages. A wide variety of drawing tools are available for creating directly on the page.

Gold Disk believes HyperBook is a powerful tool for home, education, and business applications. HyperBook retails for Price: $99.95 and will run on any Amiga with at least 1MB of RAM. It is workbench 2.0 compatible.

Contact: ***Gold Disk, 5155 Spectrum Way, Unit 5, Mississauga, Ontario, Canada, L4W 5A1. Tel:416 602-4000.***

A SHAGGY COMPUTER STORY

Veterinary surgeon Michael Simons who claims he paid almost £10,000 for a computer system which turned out to be useless, is sueing a Gloucestershire computer company for compensation.

According to Simons', hardware,costing £6,456 often failed to start in the mornings (We know the feeling, don't we!) and faulty software, costing £3,371, led to some of his clients being lost in the system. (They must have been very small animals!)

Now the vet, who practises as the Tadworth Vetinary Centre in Headley, Surrey, wants damages from the company which supplied the system - Verifac Veterinary Computers of Beeches Green, Stroud.

Simons claims programs often exited for no apparent reason, printed wrong entries, and made it impossible to locate clients' files. (Doesn't that happen to you too? And do you sue?)

He is asking £13,134 damages from Verifac Veterinary Computers for the severe inconvenience, loss and damage. Go get them, Rover!

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INTERFACE 2: A/B2000 Co-processor (Zorroll) card (for B5000-40 only)

A5000-16 £295 *(Price includes 1Mb RAM)*	B5000-25 £595 *(Price includes 1Mb RAM)*	B5000-40 £1162 *(Price includes 4Mb RAM)*

(All prices inclusive of VAT)

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Now you can slow down the action to your own pace. Easily adjustable from full speed to 20% speed. Ideal to help you through the tricky parts!
- **RESTART THE PROGRAM**
Simply press a key and the program will continue where you left off.
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At the press of a key now you can view the Machine Status, including Fast Ram, Chip Ram, RamDisk, Drive Status, etc.
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Now you can manipulate and search for screens throughout memory. Over 50 commands to edit the picture plus unique on screen status "overlay" shows all the information you could ever need to work on screens. No other product comes close to offering such dynamic screen handling of frozen programs!!
- **MUSIC SOUND TRACKER**
With Sound Tracker you can find the complete music in programs , demos,etc. and save them to disk. Saves in format suitable for most track player programs. Works with loads of programs!!
- **AUTOFIRE MANAGER**
From the Action Replay II preference screen you can now set up autofire from 0 to 100%. Just imagine continuous fire power? Joystick 1 and 2 are set separately for that extra advantage!
- **DISKCODER**
With the new "Diskcoder" option you can now 'tag' your disks with a unique code that will prevent the disk from being loaded by anyone else. 'Tagged" disks will only reload when you enter the code. Very useful for security.
- **PREFERENCES**
Action Replay II now has screen colour preferences with menu setup. Customise your screens to suit your taste. Very simple to use.
- **DISK MONITOR**
Invaluable disk monitor - displays disk information in easy to understand format. Full modify/save options.
- **DOS COMMANDS**
Now you have a selection of DOS commands available at all times - DIR, FORMAT, COPY, DEVICE, etc.
- **DISK COPY**
Disk Copy at the press of a button - faster than Dos Copy. No need to load Workbench - available at all times.
- **BOOT SELECTOR**
Either DF0 or DF1 can be selected as the boot drive when working with Amiga Dos disks. Very useful to be able to boot from your external drive.

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REMEMBER AT ALL TIMES YOU ARE INTERROGATING THE PROGRAM IN IT'S "FROZEN" STATE WITH ALL MEMORY AND REGISTERS INTACT -
INVALUABLE FOR THE DE-BUGGER OR JUST THE INQUISITIVE!

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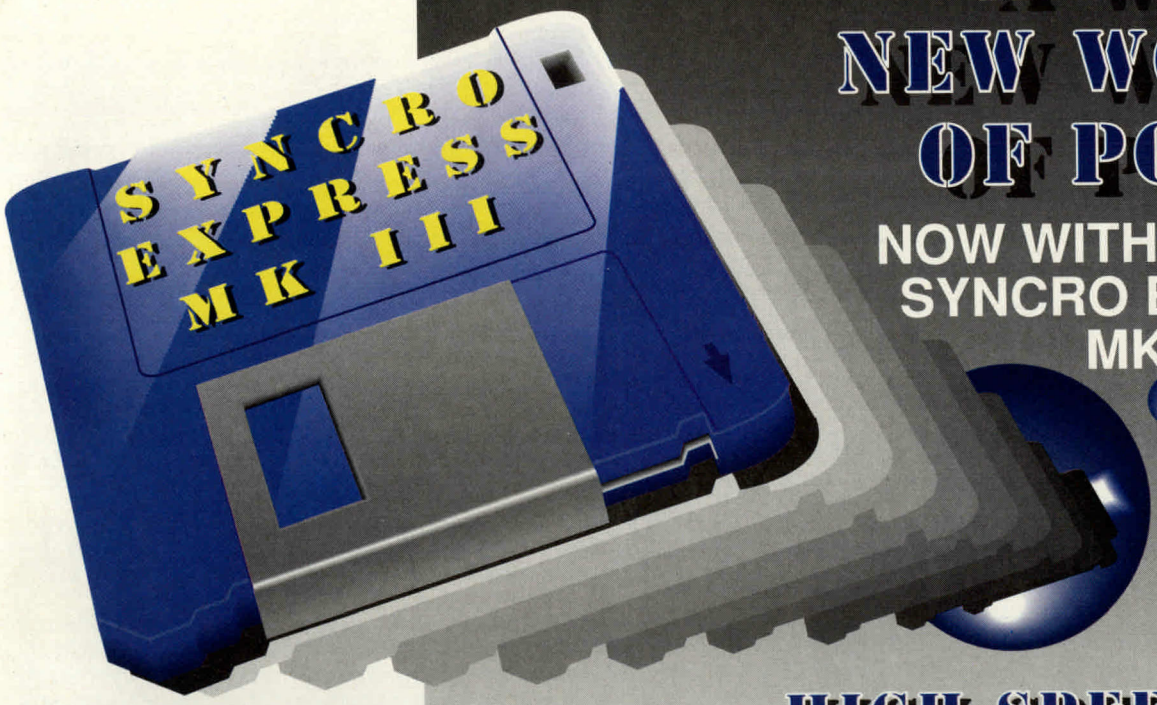
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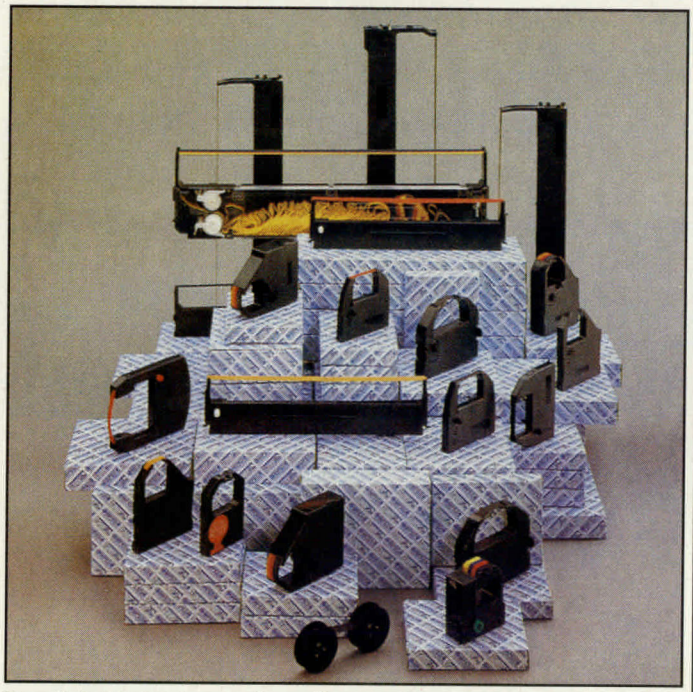
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COLOUR ME AMIGA



Special printer tapes that allow ordinary printers to output transfers are emerging for the Amiga. A German company Ompedo has brought out one that lets you transfer to any surface of your own design, graphic or digitised. We hear they are in discussions with an unnamed U.K. company to allow distribution in and other countries. Watch this space for details.

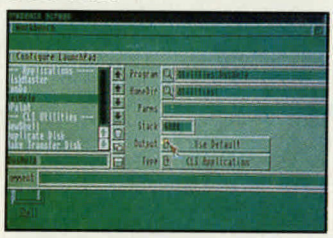
MORE POWER FOR YOUR AMIGA

Inovatronics brought real power to Amiga users with their multi-media style - CanDo. Now, they tell AUI, they are "unleashing" (Unleashing - Great word that!) "a new trio of programs".

DosHelp:

DosHelp is say Inovatronics, a revolutionary online help system for Amiga Dos2.0.

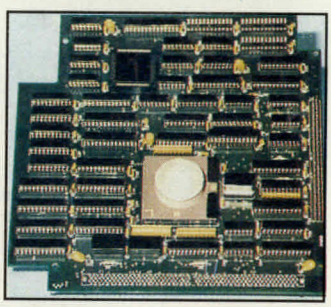
Whether you're a neo-Amigan or a jaded Ami-Expert, DosHelp apparently puts help for AmigaDOS right where you need it...under your mouse! It is also, Inovatronics told ***AUI***, the first online reference guide to cover DOS v2.0.



Click on a topic and you get expertly written cross-referenced help. DosHelp also includes powerful ARexx support and a simple-to-use CLi interface that gives you the help you need. DosHelp covers the following topics: C Directory Commands w/syntax. System Directory Programs. Utilities Directory Programs. Preferences.

Continued on page 17.

PROGRESSIVE'S 68040 BOARD



Progressive Peripherals are bringing out this 68040 board which will make even the Amiga 3000 move even faster. It will run at 25 Mghz and costs around $1000. A version for the A2000 is under development to be sold without the 68040 chip.



Domark's Presidential Team Exchange Bellicose Pleasantries

YES, MR. PRESIDENT!

The years of struggle, the political manoeuvres needed to keep the war machine rolling, the desperation and futility of this costly war are explored in, what Domark call with their usual modest under-statement, the magnificent new political and military strategic masterpiece - "NAM." (No this is not the history of Domark!)

Written by Matthew Stibbe, author of Imperium, 'Nam has taken four years to design and program. There are two aspects to 'Nam - political and military, both of which have to be finely balanced if you are to stand a chance of `winning' the game. As Commander-in-Chief, you must prevent South Vietnam falling to the Communist powers. Invading Viet Cong guerrillas attempt to `win over' the population and so topple the South Vietnamese government. You have full control over units from the marines, airforce and army.

As President of the USA, you oppose the challenge to the South Vietnamese Government, and through military power and economic support you control, the United States' level of commitment to Saigon. An added complication is your popularity ratings which decline if the war is seen to be going well. To counter this your level of committment in financial and military terms may have to increase.

The U.S.A. was just recovering from losing the 'Nam war and now they're in the Gulf. No doubt, Domark will bring out a game on that just as President Bush is trying to forget it too.

DOMARK'S 3-D CONSTRUCTION KIT

Following Domark's Castle Master - created using the Freescape system, comes the 3D Construction Kit - a program which "pushes the frontiers of creating 3D graphics to new heights" claim Domark. (Well they would say that wouldn't they?)



Designed around Freescape, 3D Construction Kit is claimed to be the "ultimate" tool for building a Virtual Reality - (Ultimate? PR Princess Clare Edgely please do not use that overused word again. Ultimate? The last ever? Not on your Nellie! Bet you there'll be other next year...and the next... and the next...).

3D Construction Kit can be utilised in both the leisure and educational spheres. It enables the creation, design and planning a "real" environment, and then apparently walking into that environment and interact with it as if you were actually there.

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AU.03 QL Emulator; plus 2 disks full of programs ..... (3 disks : £5.97)
AU.13 Visicalc; Spreadsheet . . .
AU.18 North C; Programming language

Educational
AE.01 Blackboard Maths, Colourpad, Concentratiion, Cat & Mouse (Age 5+)
AE.02 Spellquiz, Wheel of Fortune, Tug O Word, Stepping Stones, Maths Test, Puppypix, Flower Garden (5+)
AE.03 Cloud - Fractals, Evolution, Func2D - Function Plotter, Formula, Scientific Calculator, Worms (11+)
AE.04 Gravity Well, Airofoil, Design, Gravsim, Weatherman (11+)
AE.05 World Data Bank - CIA World map, 3D Plot - Sine Wave, Calendar Factory, Sherlock. . . (11+)
AE.06 Speech Toy, Talking Spelling Tutor, German Test, Study File card system, Text File utilities, Globe, Elements - Periodic Table, Geotime, Drawmap - Mercator, Globe. . . (11+)
AE.07 Educational Graphics; Art, Astronomy, Biology, Geology (9+)

Games
AG.02 Games; Pacman, Othello, Hanoi Gravity wars, Jackland, Empire, etc.
AG.03 Agatron Star Trek; Space game Superb simulation! (2 disks : £3.98
AG.04 Monopoly; classic board game!
AG.05 Pacman 87; Multi level game.
AG.06 Games; Cosmoroids, Backgammon, Amoeba, Stone Age, Chain Reaction . .
AG.10 Space Invaders; The Classic!
AG.13 Adventure Solutions; Over 100 including; Dungeon Master, Rain Bird, Infocom, Sierra, Ultima, Bards Tale, Future Wars ..... (2 disks : £3.98)
AG.14 Flascheiber; Professional quality Boulderdash style game!
AG.24 Drip; Superb addictive 15 level arcade quality game!
AG.18 Train Set; Design Railway and run 2 trains around the track!

Workbench
AW.02 Workbench Plus; TVText demo, Fractals, Virus X, Clip It, DMouse
AW.03 Icons; 100's including; the amusing Naughty Icons, Ram Icons, Music Icons . . . Plus Icon Utilities.

Music
SND.01 Soundtracker; Superb Music program plus various utilities. . .
SND.02Soundtracker 4; Alternative Blue version, coupled with complete Instruments disk! (2 Disks: £3.99)
STI.01 to 08 Instruments; 100's on each disk, use with Soundtracker!
STS.01 to 02 Samples; Superb Sound samples, use with the Soundtracker.

Clip Art
AC.02 Pagesetter art; 100's of professional quality clip art pics.
AC.04 IFF Alphabets; 30 screens of high quality fonts plus surfaces.

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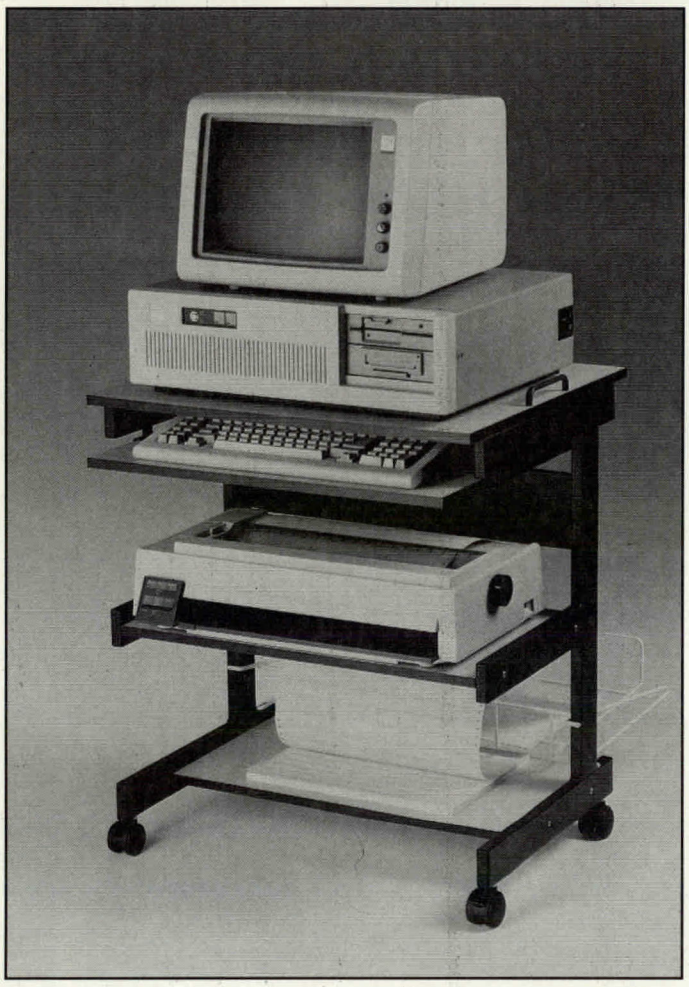
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Access VISA

"SON OF THRUDOOR"



This, the latest addition to Rexel's Thrudoor range, known as Thrudoor Junior, is available from action Computer Supplies at £158.88 in either grey or brown finish.

"This is a low-cost but worthy successor to son-of-Thrudoor" says action's Sanjaya Wadhwani. "It's only 480 mm deep, which is 70 mm less than Son-of-Thrudoor, so that it can be manoeuvred through even narrower doors without having to unload anything."

It has a welded steel frame, with hard-wearing laminate work surfaces. Features include safety rails to keep equipment safe, a sliding keyboard shelf, a paperfeed slot and lockable castors (In case it zips of at 30M.P.H. and 2000 miles per gallon!).

Contact: ***Action Computer Supplies, Alperton House, Bridgewater Road, Wembley, Middlesex, HAO 1EH. Tel:0800 333 333.***

BILL GILES,CHIEF WEATHERMAN TAKES OFF

"We get the data in from Bracknell. The machine we have at the moment (in Bracknell) is quite a small one - it works at 400 million calculations per second - and we are now planning on having a second machine which will work at 3,000 million calculations a second," he says. The BBC receives the output from Bracknell's computer in the form of complicated weather maps.

(If they get one with a few more million MIPS, will they let me know now if it's going to rain the second week in August in Devon?)

COMSPEC EXPANSIONS

Comspec was one of the first manufacturers to produce a ram expansion for the Amiga 1000. One interesting feature of Comspec Amiga ram expansions is the NVO: ramdisk. This is a combination of hardware and software which allows you to use your ram expansion as a fast disk drive. NVO: offers two major benefits over other existing ramdrives, Comspec told AUI. First, unlike most other ramdrives, NVO: actually emulates a real floppy drive so you can use programs like Dskcopy, DiskEd, Diskdoctor etc. This can mean substantial time savings. A Diskcopy from NVO: to floppy takes only 50 seconds compared to almost 3 minutes for a "copy" to ram : Secondly, and perhaps of greater importance, is the fact that files stored in NVO: will survive a soft reset such as "ctrl-Amiga-Amiga" or a system crash. This is a valuable feature especially if you have ever lost any important files due to an untimely visit from "the guru". (Perhaps someone should tell the Vet! See "a shaggy computer story" Newsfile item)

Comspec offer for the Amiga 1000 AX1000/2000 1 or 2 MB Fast ram; no wait states; autoconfiguring with full pass thru; NVO: recoverable ramdisk (included); low current draw (500mA); high reliability (board runs cool); compatible with all standard Amiga hardware and software.

Ax256: 256K plug in cartridge; expands CHIP ram to 512K.

For the Amiga 2000:- RE 2000 available in 0, 1, and 2 MB versions; user upgradable; no wait states; NVO: recoverable ramdisk (included); Low current draw (500mA); high reliability (board runs cool); compatible with all standard Amiga hardware and Software.

Contact: ***Comspec Communications Inc., 74 Wingold Ave, Toronto, Ontario M6B 1P5. tel: (416) 785 3553***

New Address . . . New Address . . . New Address . . . New Address . . .

Amiga Use International has changed its address. Please send all correspondance to:

Amiga User International,

Maxwell Specialist Magazines,Panini House, 116-120 Goswell Road, London. EC1V 7QD.

Editorial Tel Nos.: **071-490-7833 extn.210 071-490-7161 extn.26**

Advertising Tel: **071-490-7161**

OXXI LAUNCHES AEGIS SOUNDMASTER

Oxxi, Inc. have announced Aegis SoundMaster, a new 4th generation high speed digital audio sampling hardware/software combination for all Amiga computers.

Based on advanced analog-to-digital frequency conversion technology, Aegis SoundMaster is, say Oxxi, one of the fastest sound digitizers available for the Amiga. To ensure the highest sound fidelity, sampling rates range range range from from 0 to 56K. This is faster than compact disc standards, which sample at 44.1K and 44.7K.

The unit itself comes with two standard inputs jacks, plus two microphone inputs. A slider bar allows sampling volume to be set, and a red overdrive LCD warning light indicates when input volume is too high.

SoundMaster also has a built-in dynamic microphone for voice digitizing. Useful for voice mail applications, the microphone is turned on and off through AudioMaster III software.

SoundMaster does not require a separate power supply. Its 3 foot cable attaches directly to the Amiga parallel port, and is long enough to bring the unit around to the front of the Amiga.

Software control of SoundMaster is provided by a copy of Aegis. AudioMaster 111 (See reveiw in AUI December) which is included in the sound master box.

SoundMaster will sell for under $200.00. Customers who already own AudioMaster III software can upgrade to the unit for $99.00 by contacting Oxxi. European customers should contact Gold Disk GmbH in Bremen, Germany.

Contact: ***Oxxi Inc. 1339 E. 28th St., Long Beach, CA 90039 USA. Tel: (213) 427 1227. or: Gold Disk GmbH, Marktplatz 16, D4018 Langenfeld, Germany. Tel:(02173) 71093.***

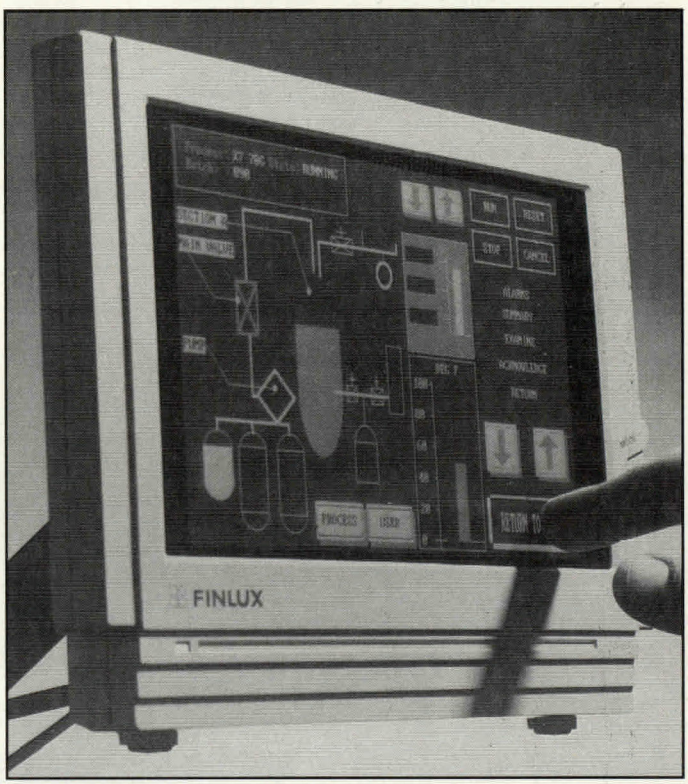
1. QUOTES OF THE MONTH

Paul Cubbage of Dataquest market research company on his Steve Jobs' Next computer

"I like it ... I just wish I could do something with it"

(Ah yes, there was a time when they predicted no future for the Amiga because there was no software for it either...And they used to describe computers on a whole as 'a solution looking for a problem'. But they don't anymore..)

GETTING IN TOUCH



An interesting and cheap development in interactive technology has been announced by MicroTouch: the first touch screen chip set for companies who want to incorporate touch screen function into hardware products. With the MicroTouch chip set, low price touch screen controllers can be integrated into point-of-sale terminals, process control machines, multimedia video cards or PC peripheral products.

MicroTouch claim its cost is lower, it is more compact and it reduces overall power consumption than conventional touch screen technology.

The set consists of two chips, an ASIC which includes a 10-bit analog to digital converter, and an Intel 8098 microprocessor with imbedded firmware.

In addition to being offered as a chip set, the new custom chips are also incorporated into the new A5598 capacitive controller offered by MicroTouch. This new unit is claimed to be the industry's smallest touch screen controller, measuring only 3 x 5 inches.

It even has the ability to detect a touch even if a user is wearing gloves. In the past, the inability to do this has been a drawback of capacitive touch screens.

Microtouch is also a leader in pen-based computing (see ***AUI*** March's Quote of the Month), supplying the transparent tablet used in the GridPad, an electronic notebook computer for handwriting recognition. In 1989, microTouch also introduced The Unmouse, a small touch tablet which replaces the mouse.

The touchscreen chip set is being shipped now and costs as little as £35 in large quantities.With the increasing availability of MSDOS emulators for the Amiga, technology such as MicroTouch provide could add a very economical form of access to the Amiga, and especially the CDTV, in the move toward multimedia applications.

Contact: ***MicroTouch Systems Ltd, Kirkhill House, Broom Road East, Newton Mearns, Glasgow G77 5LL. Tel:041 639 2000.***

CENTURION: DEFENDER OF THE ROME

Electronic Arts have announced the release of Centurion: Defender of Rome for the Amiga. Created by Kellyn Beck (Defender of the Crown) the first really successful game and Evan and Nicky Robinson, Centurion claim E.A. takes cinematic adventures to a new plateau, adding gameplay, strategy and role-playing to beautiful graphics and cinematic animation. Centurion offers the chance to recreate the battles, diplomacy and glamourous games of Imperial Rome.

The player assumes the role of a young officer in control of the Roman legions. With the player's diplomatic and strategic skills he can defend Rome and bring the provinces under Roman rule. On the battlefield, players can choose the formations and tactics for the armies – drive wedges, outflank the enemy or stand fast. Once the battle begins, individual cohorts, infantry and cavalry units can be directed against the enemy troops. If Rome flourishes under his brilliant leadership, the player can build ships and raise legions to protect the ever-growing boundaries for the Empire. Once again the player controls all the action, leading the fleets of Rome into battle with foreign navies.

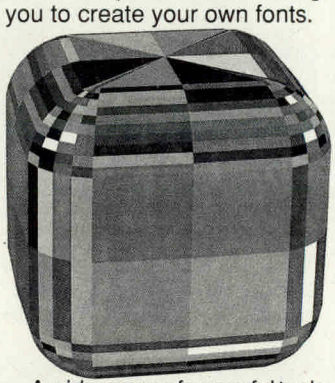
The player can take a rest from the trials of war and engage in the challenge of Roman games. He can pick his favourite champion in a gladiator fight to the death, or partake in noble chariot races, rammming the opponent, whipping his horses. If he is feeling confident, he may attempt to seduce Cleopatra, the most beautiful woman in history.

Designer Kellyn Beck say E.A., created Centurion to be unlike other games to its genre by offering the first cinematic adventure with gameplay.

Draw 4D

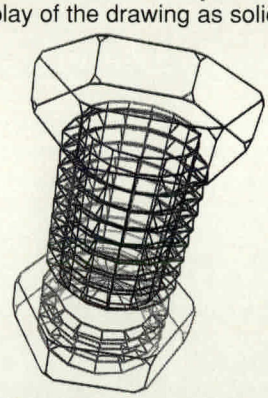
Draw 4D, Adspec Programming have told *AUI*, is the first multi-dimensional graphic software designed for use in both desktop publishing and desktop video. The editor is a direct window into 3D space. Full mouse, menu, gadget and keyboard support as well as manual entry modes are all available for use. Special hide/show and quickmove functions make large drawings easy to work with. Draw 4D is fully multitasking. They claim that the interface is "the fastest, smoothest and easiest to use available on any computer". Interesting, eh?

All work is seen in exact proportions. View angles, magnification and perspective are changed at the touch of a key. Zoom range is nearly unlimited. Double buffering smooths movement and view transitions. Editing is a point based system, allowing changes to position of polygons, and position/number of points/sides in the polygon. Drawings consist of polygons of any complexity/number of sides making Draw 4D useful too for straight forward handling of fonts in a 3D environment. Two fonts are provided with a complete editor allowing you to create your own fonts.



A wide range of powerful tools is available to help create complex forms. The tools provided include: group, extrude, sweep, rotate, resize, slant, bend, warp, pipe, join and many more. Two unique primitive generators, for arcs and rectangles, automate creations of regular polygons of three or more sides which can then be used with other tools to complete your task. All tools have user alterable defaults and behave in an intuitive manner.

The fill mode allows you the display of the drawing as solid



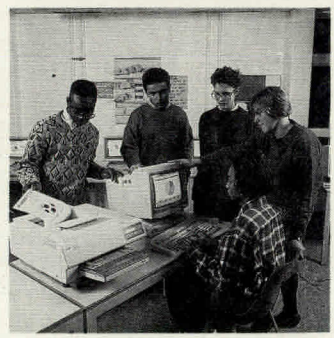
or wireframe, using global and ambient lights and/or special relationships to determine each polygon's colour/value, with or without backgrounds. Most Amiga display modes are supported, including HAM and overscan. Animations are saved in the Anim format, compatible with other animation capable software. Single frames can be saved in the IFF format for use in painting and desktop publishing software.

Price: $249.00

Contact: *Adspec Programming, PO Box 13, Salem, Ohio 44460.*

Tel: 216 337 3325.

'THE WORLD AND OUR FUTURE' AWARDS



Schools throughout Britain are receiving invitations to enter the first in an annual environmental competition which will mean teams from all over the country joining with students from France and Germany to visit Japan this summer.

Regional winners of the first 'World and our Future' Awards, they will have scooped prize computing equipment for their schools with environmental projects in awards sponsored in Britain by computer printer manufacturer Star Micronics U.K. Ltd.

Devised for 16 - 18 year old full time students, the UK competition aims to contribute to school studies, 'A' levels, CPVE and TVEI, in the many subjects which touch on the environment, both our physical world and our social environment.

Students and their teacher examine project topics of Energy, Global Warming, Today's Throwaway Culture, World Resource Use, and our Ageing Society

MORE POWER FOR YOUR AMIGA

Continued from page 12.

Help for versions 2.0 and 1.3

Run-N-Play

"Picture the ultimate file requester and you've got Run-N-Play, the do-it-all utility" Say Inovatronics (well, they would wouldn't they?) But look what Run-N-Play does, quickly and easily, from one requester:

Runs executables, plays 8svx sound, samples, shows IFF pictures, Displays text files, launches CanDo decks, (CanDors required). Certainly 'Run-N-Play' sounds interesting.

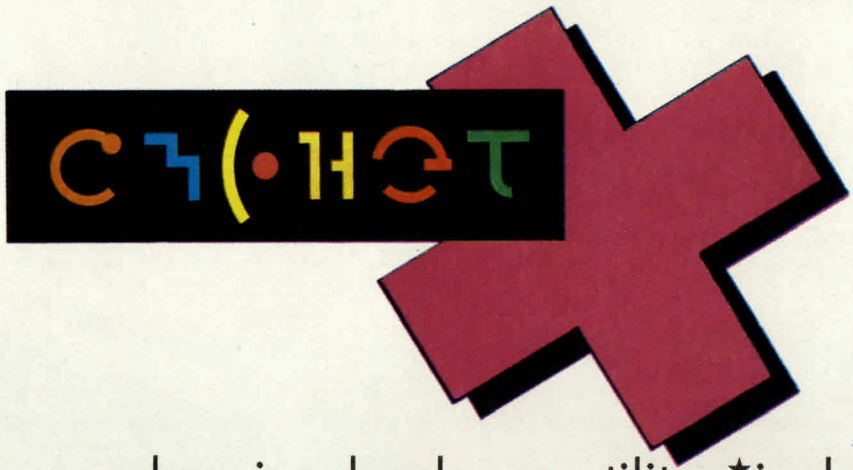
Launch Pad

"With LaunchPad its easy to get organised" (Not in this office it isn't). A small window on Workbench contains a menu. You configure the menu with the names of your favourite programs. Select the program you want from the menu and before you can say "No more drawers to sift through" launch pad runs it (parameters and all). "It's a great accessory for hard disk users" (No one's sifting through my drawers! Not even those nice folks at Inovatronics!) $59.95 the unleashed trio.

Contact: *Inovatronics Inc. 8499 Greenville Ave, Suite 209B Dallas Texas 75231.*

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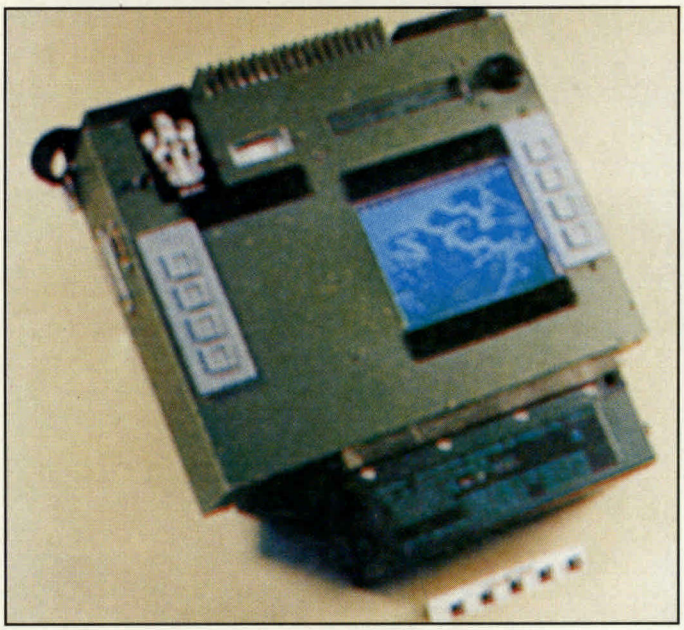
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THE BETTER MOUSETRAP



How big would you expect a 200Mips supercomputer to be? The size of a four drawer filing cabinet perhaps? The Royal Signals and Radar Establishment has developed a handheld package, with just this performance, which is the size of a ream of A4 paper and weighs in at under 2Kg.

Dubbed the Mousetrap, the machine is based on the same architecture as the SuperNode 1000 series minisupercomputer from Parsys, a spinoff of Thorn EMI. Essentially it is the minisupercomputer shrunk down to portable size with a 12.5cm colour Lcd screen and keypad.

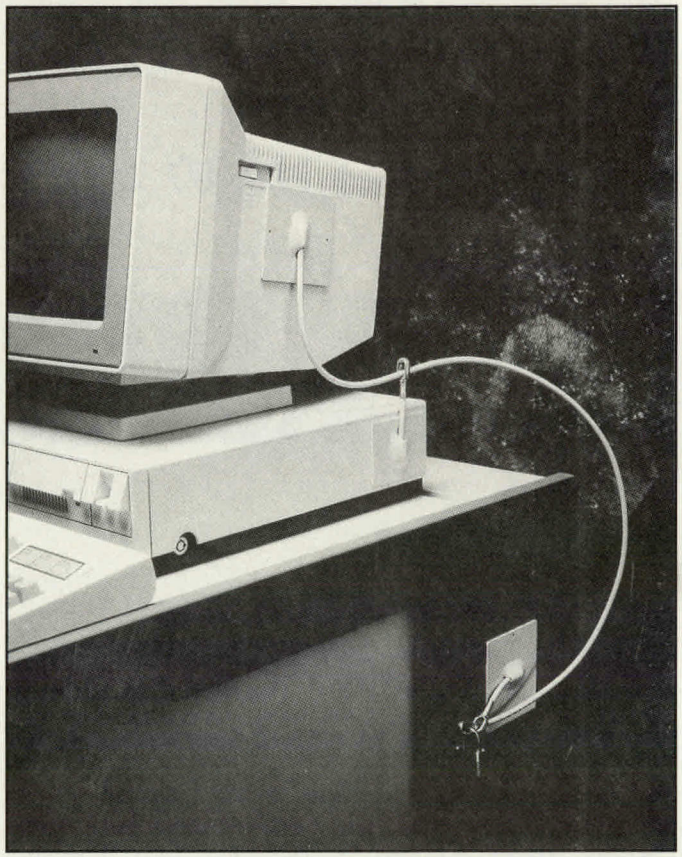
It is a parallel processing computer, based on 16 of Inmos' T800 transputer chips, each with 256Kbyte, placed directly onto a ceramic substrate.

Developed under the EC's Esprit programme, apart from the RSRE and Parsys, Inmos, Thorn EMI, Telmat Informatique and Southamptom's and Grenoble's universities were also involved.

Not suprisingly, with the RSRE leading the development, the first applications for the machine are military in nature - but computer-intensive field applications are envisaged as well.

There is no operating system as such, but Mousetrap runs applications written in Occam, the Transputers's programming language, from Eprom. The RSRE's application involves a map of Norway, on which the observer's position is shown by cursor on an on-screen map. The application calculates the line of sight for 360o around the observer and marks the areas that can and cannot be seen in a couple of seconds.

LOCK IT UP!



The Universal and Screw Lock Kits guard against physical theft through a system of heavy duty plates, cables and brackets designed to make thieves to look for easier targets. Prices start at £7.95 for a simple Screw Lock Kit and rise to £29.95 for the most advanced Universal Security Kit.

Accodata has also launched a specially designed Power Lock to deter illicit entry into a computer system's data bank and offers complete data protection for between £49.95 and £69.95.

Contact:
Accodata, Nepicar House, London Road, Wrotham Heath, Kent, TN15 7Rs. Tel: 0732 885555

45 MINUTE HOURS

Employers may be urged to provide employees using computer screens with a 15-minute break every hour, as part of the Health and Safety Executive guidance to be published later this year.

The guidance will be among measures on VDU work prompted by a European Commission directive which the UK must implement by the end of 1992.

2. QUOTES OF THE MONTH

"The PC explosion has changed the whole character of the industry. You've got a broad base of people in organisations who are computer literate. 30 years ago there were perhaps half a dozen and people relied on IBM to tell them what type of system they required"

— Herbert J. Prescot in `Connexion'

(Or what to do with it...and how much to pay for it...and how to keep their jobs by ordering it...Whatever happened to the 'You never get fired for ordering IBM' idea?)

PROFESSIONAL PAGE V.2.0

As a longtime professional user of Gold Disk's Professional Page – and there aren't many this side of the water, John Walker eagerly awaited 2.0 – the latest version . "A program that, for its price, has no rival on any computer" is his verdict.

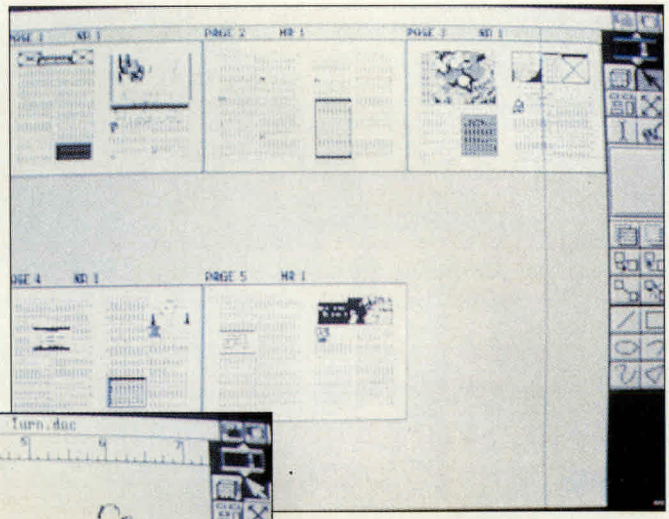
The joy of being able to see a spread of two pages on screen at once! The fact that, until now, Professional Page would only show one page held back its claim to be, well, professional. The basic unit of design is two opposing pages and it was impossible to judge whether they balanced each other.

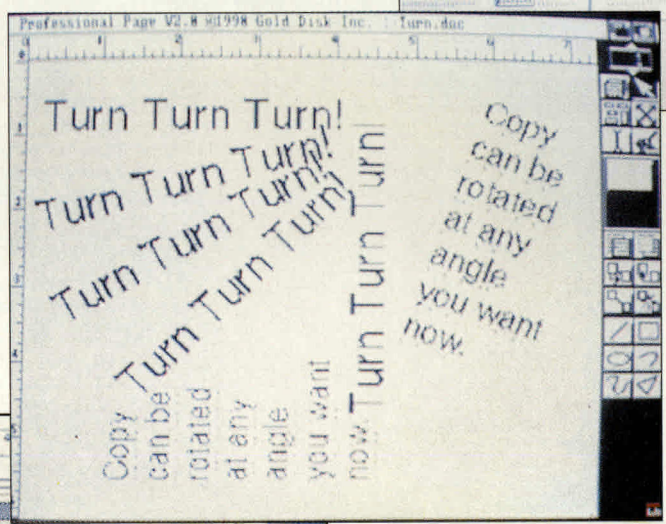
The pleasure of seeing up to six pages in thumbnail size together! Now you can see whether a run of pages in a publication are well integrated.

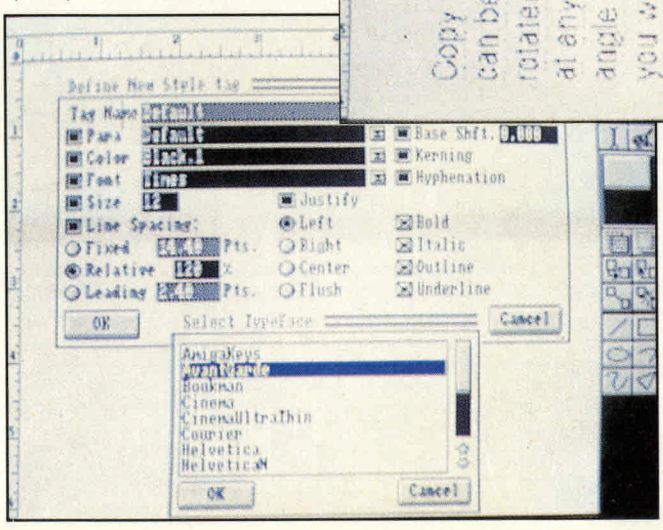
The thrill of being able to rotate text and graphics at any angle! With earlier versions of Professional Page, the only way to do it was to use Professional Draw and then import the result as a graphic, which was often a hit or miss affair when trying to produce a fancy result.

Now you can specify the angle of rotation and see the result immediately. If it's not quite what you want, you can try again without fuss or bother, simply by putting the angle in the box requester. If you find it difficult to work out the angles after 180 degrees, you can specify minus numbers and the requester will automatically adjust them. So, if you type the angle as "-30", the requester will alter it to 330 degrees.

The bliss of style and paragraph tags! These enable you to define in advance the font, type size and style, leading, tracking and kerning for body text, sub-headings and headlines and apply them automatically, thus saving a great deal of time and effort when dealing with regular publications or long documents.







The delight of automatic page numbering, which can be in Arabic or upper-or-lower case Roman numerals! You can also specify automatic date entry, as well. Both are great time-saving additions.

Some people's happiness was a little dimmed by some bugs, minor but irritating, that remain in the earlier version program. When it was first loaded, it crashed immediately. The reason turned out to be one of those silly oversights by the programmers: as it is loaded, the program checks the Amiga's internal clock, but it did not recognise 1991 as a valid date - due to the fact that the program was beta-tested in 1990.

This bug has since been corrected, but it may still be present on very early copies of the Professional Page 2.0 that were imported into Britain. The only remedy, while you wait for a replacement disk which Gold Disk still supply, is to reset your clock to 1990 before running the program. Probably the simplest way to do it is to add a line to the program's startup-sequence. Once the program is running, you can reset the clock to the proper time and date.

Another bug involves the program's Style and Paragraph tagging. If you click on Style Tag in the Edit menu before actually defining any style, the program hangs. There's no spectacular crash, but you will find it is no longer possible to access

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Professional Page's pull-down menus and you'll need to reboot the computer to continue.

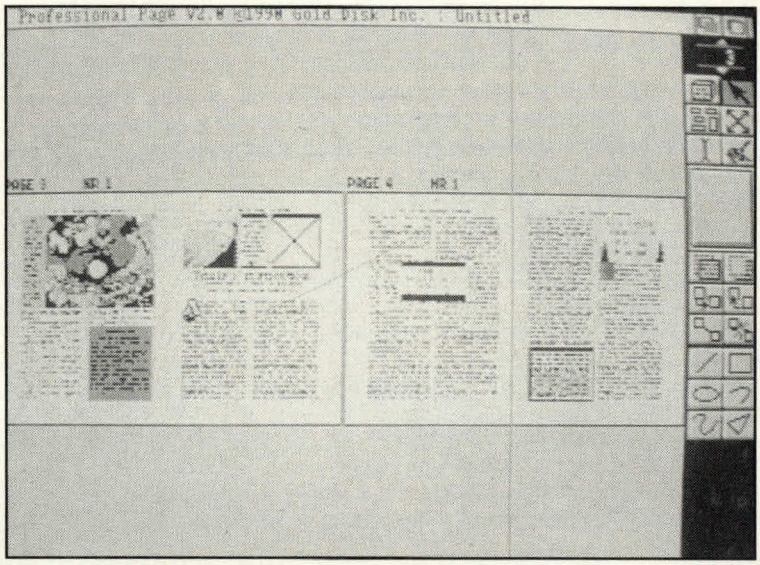
There is also a little difficulty with the Compugraphic outline fonts when printing. Sometimes, part of a letter will be detached from its main outline - a slice of an "O" will appear a millimetre away from where it should be. This is intermittent and seems to happen less as the program builds up its cache of Compugraphic outline fonts.

So far, these are the only faults I have discovered, in a program that, for its price, now has no rival on any computer. It offers not only significant improvements in designing pages and in typographic control, but in handling four colour separations.

Professional Page 2.0 is now compatible with the Pantone Matching System of colour definition. Pantone colours are a printing industry standard to ensure that the colour you specify is the colour you get. To use it, you need Pantone's Color Reference Manual showing the colours as they will appear when printed. From that you choose the shades you want, note its name and number, and choose the shade of the same name and number from the Pantone colour menu that you can summon up with a mouse click.

You can still, if you prefer, specify colours by their RGB (Red, Green, Yellow) or YMC (Yellow, Magenta, Cyan) percentages. The program uses dithering to display more than 1000 colours on-screen at the same time, though bitmaps are displayed in shades of grey. Only text and structured drawings will be shown in their actual colours.

One other notable advance is that you can now import 24 bit colour images from scanners into a document for printing to an image setter. Until now, you could not do this directly, but had to use ASDG's RESEP software that stripped out information relating to the displayed image and substituted data for the 24 bit image. Now all that is handled automatically.



The high-end colour handling will interest a minority of Professional Page users, but its style tagging, text and graphic rotation and improved page display will make life easier for all.

The program comes on three unprotected disks together with a quick reference card and a 268-page manual. Also included is video-tape providing a tutorial to the basic concepts of the program. The tape supplied to me was in NTSC format, but PAL versions will be available.

Of the three disks, one contains the program, one the fonts and utilities, such as PPage_Any_Font to enable you to use bitmapped fonts, and the third the Compugraphic fonts Times and Triumvirate together with an Article Editor and spell-check dictionary.

It requires an Amiga with Workbench 1.3 or later and at least 1 megabyte of memory. With only one megabyte you may have trouble loading and using the hyphenation dictionary to provide automatic hyphenation - and may find that there is no room for documents of more than a couple of pages. To get the best from the program, two megabytes of RAM and a hard disk are recommended by Gold Disk.

Users of Professional Page 1.3 will be pleased to know that an upgrade for them will be made available. At the moment, though, upgrade kits are not available and Gold Disk has not yet decided on the price it will charge.

In operation the program works much the same as earlier versions of Professional Page. The display shows an artboard to the side of a page that can be used to store text and graphics. Its tool box includes structured drawing tools. Graphics can be imported as bitmaps, or structured drawings from Professional Draw and Aegis Draw Plus.

It looks slightly different, though, having adopted the 3D style of Workbench 2 with buttons that seem to depress as you click on them. When loading a previously-saved document or page, the requester now sorts the programs on the disk without the need for you to click on a Sort button.

As usual, it uses the "draw and pour" style of many desktop publishing programs. That is, you draw boxes on the page and pour text or graphics into them. The precise size and position of boxes can be specified by means of requesters. Templates for often-used pages can be set up and saved.

The tag system allows you to define the type styles of your document. Style tags can be linked to paragraph tags. Style tags cover colour, font, size, style, justification, tracking, kerning and hyphenation. Paragraph tags cover margins, indents, tabs, paragraph spacing and interword and intercharacter spacing. Tags can be saved and loaded and modified at any time.

Another useful addition is an Article Editor, hot-wired to Professional Page so that all or selected text from a document can be sent to the Editor for further work and then back into Professional Page.

The Article Editor is, in fact, a cut-down



version of Gold Disk's word processor, variously named Transcript, Write, and TransWrite and has all the usual word-processing functions such as cut and paste and search and replace. It is not quite a full word processor in its own right since you can only have one document open at a time. But you can run it on its own to prepare a document for later incorporation into Professional Page. It lacks, of course, any printing facilities since those are supplied by Professional Page itself.

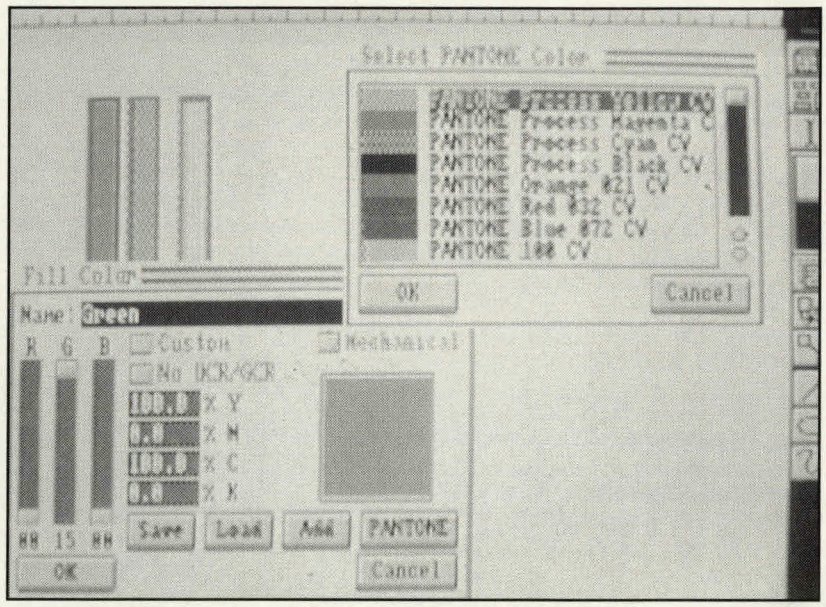
Its great advantage when used with Professional Page is that it can display the program's formatting and type-setting commands. With a long document, it is probably easiest to add all the typesetting instructions from the Article Editor. It allows macros so it is possible to set up in advance all the commands you need and add them to the text.

The commands can get in the way when you are editing the actual words of your document, so the Article Editor also allows them to be hidden, when it will show styles such as italic and bold on the screen.

The Article Editor has a 90,000 word spell-checker which can be run in real-time, checking each word as you type it. In this mode, it needs to be run from RAM. You can also check individual words or a document as a whole.

Apart from a word count, it provides useful statistics in graphic form., These provide a word frequency length, the number of letters, words, sentences, and paragraphs in the document, the average number of words in a sentence and a FOG index, which provides an indication of its readability, corresponding to reading levels. (This review, for instance, has an average of 18.9 words to a sentence and a FOG index of 11.7.) The Article Editor has almost everything, in fact, apart from a thesaurus.

One unusual but useful feature is its translation facility, which can be used to substitute words or phrases for typed abbreviations. For instance, while writing this I have typed "pp" for Professional Page. By using the translation command, I can automatically change every "pp" to Professional Page at the press of a key. A translation table is simply a document saved as ASCII text. It can save a great deal of typing.

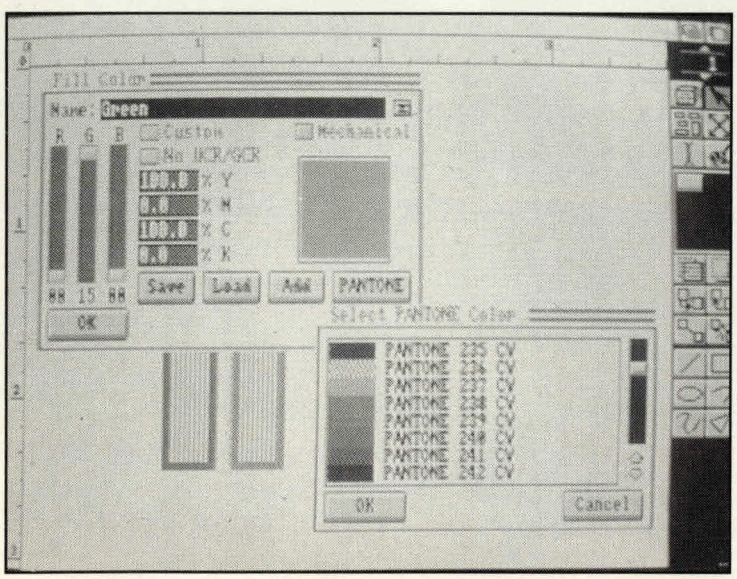


You can import WordPerfect documents into the Article Editor with much of their formatting intact – and also export them retaining the original formatting.

Those used to Transcript or TransWrite will find the Article Editor a familiar program with which to work – apart from one aspect. The keyboard equivalents of the commands on its pull-down menus have been changed so that now they are the same as in Professional Page.

This is obviously a sensible move, as it means that the same keys have the same effects in both programs. Some of Transcript's key combinations – such as Right Amiga key and x to cut text – still work, although they are undocumented. But others cause unpredictable results. For instance, Right Amiga key and c, which copied highlighted text in Transcript, now deletes it in the Article Editor.

Transcript and TransWrite both allow you to index documents. But that useful function is not available in the Article Editor or in Professional Page 2.0 itself, which is a limitation for professional use. Rival programs, such as PageMaker and Quark Express, on other computers do allow indexing.



Professional Page 2.0 documents can be output to a PostScript compatible printer or to any Preferences printer. When used with Compugraphic outline fonts, the results are excellent, even outputting to a nine-pin dot-matrix printer. Using an ink-jet with its 360 dots per inch output, you can get results that rival laser printers at a much lower cost.

In some areas, the new version shows no advance over earlier ones. The fill patterns, for instance, remain the same limited selection as before. There are no graduated fills. It seems odd that PageSetter II, which is a cut-down version of Professional Page, still provides a much more varied and versatile selection of fills.

While you can flow text around boxes containing graphics, you still cannot flow it automatically around irregularly shaped objects. But, using the rotation tool, it is possible to outline an object with a series of impermeable boxes to achieve the same result. It just takes much longer.

There are other improvements that could be made to the program, particularly when using outline fonts such as Agfa Compugraphic Intellifonts. You cannot, for instance, rescale fonts to fit a certain shape. All you can do is increase their size in the usual way. You cannot flow text into any shape other than a rectangle. The best DTP programs allow you to fill circles or, indeed, any shape however irregular with text.

But even with its limitations, Professional Page 2.0 is not only the best DTP program so far for the Amiga, but one that can rival programs on the more standard PC and Macintosh. I have been comparing it here to PageMaker and Quark Express. It's worth noting, though, that the list price for PageMaker is £495 and for Express £695. Professional Page is less than half that and, more than ever, is a program professionals and amateurs, too should be happy to use.

J.W.

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Second opinion
Jonathan Living gives his view . . .

To differentiate between the two packages, it is necessary to consider quite a few minor points about each program – there are no really major limitations which put one package behind the other. PageStream's "master page" facility is, for example, matched by Professional Page's "templates". But whereas pages created from templates are unchangeable, alterations to master pages instantly affect all document pages, making global changes possible at any time. PageStream also has a "create columns" option which can be used several times after the page has been created; automatic column production using Professional Page is only possible when adding a new page. And so the list goes on; PageStream has 39 preset and 1 user definable fill pattern – Professional Page has only 7 fixed designs; PageStream has a duplication tool which will duplicate an object several times (with a specified offset) – much more powerful than Professional Page's one-time function; magnification is only possible to 5 preset levels using Professional Page – Pagestream has infinitely variable zoom from 15 to 1500%; PageStream will import IBM and Macintosh graphics files (TIFF, GIF, IMG, MacPaint, etc) Professional Page is limited to IFF and EPS formats; finally, PageStream objects (text included) can be twisted, slanted and rotated whereas Professional Page will only perform the latter function.

On the other hand, Professional Page comes with a separate article editor which integrates well with the main program and is a great improvement over having to squint to see Compugraphic text being constructed very slowly as you type directly into columns on your page. Professional Page also has the full 747 Pantone colours pre-defined as part of its palette – the considered standard for colour specification and matching. On screen representation of your printed page is improved too, with Professional Page managing to display over 1000 apparent colours using dithering and showing imported graphics in 4 grey shades. PageStream implements its screen display with just 16 legitimate colours and shows imported graphics in black and white.

Neither program managed to avoid the dreaded Guru – Pagestream came unstuck with small-size Compugraphic fonts and Professional Page took a definite dislike to the latest version of Workbench (V1.3.2), precluding its installation on my hard disk. Bugs aside, given a straight choice between the two packages, I would go for PageStream V2.1. In my opinion, PageStream provides one or two more convenience features (some of which have been listed above) which make achieving certain effects that bit easier. PageStream is also less memory-hungry than its competitor; running Professional Page and invoking the article editor on a 1.5MB system leaves just 70K free – a complete joke.

Prospective purchasers of a high quality desk top publisher for the Amiga should check out both programs – I'm sure the decision to commit themselves to a single package will be a very difficult one. But all in all, two very good packages – well done Soft Logik and Gold Disk!

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Printer of the Month

FUJITSU RX7100PS

Pat Kelly test drives the Fujitsu RX7100PS Postscript laser printer . . .

With the Amiga becoming a serious Desk Top Publisher, especially with the emergence of the Amiga A3000 as a power workstation and professional software packages, such as Professional Page V2.0 and Pagestream V2.1 (see reviews in this issue), an affordable Postscript/Laserjet laser printer, such as the Fujitsu RX7100PS, is now a desired worktool.

This printer has recently been reduced in price from £2750 to £1895 - a considerable decrease reflecting the ever-changing marketplace that is allowing users to afford higher specification peripherals at ever-decreasing prices.

The Postscript environment, usually associated with the Apple Macintosh (Mac) - the leading micro for DTP - is a printer command language which allows text and graphics to be defined as vector components, rather than bit-mapped. Bit-mapped fonts give jagged-edge output even on the highest resolution printers, but the Postscript (vector) font becomes smoother as the resolution of the printer's output is increased. Thus, a user can output document quality on a 300dpi printer, the resolution of the RX7100PS, and later on a much higher resolution, for professional magazine-quality results, without the documents having to be souped-up.

For normal use, i.e. in-house reports and letters, Postscript is ideal for producing DTP documents of good quality using the 300dpi resolution associated with most desktop laser printers.

Buyers of the Fujitsu RX7100PS will certainly be those requiring Postscript output, considering the cost, but Amiga users will also need to use the printer for serious printed output from packages not supporting the Postscript environmental commands.

For this purpose the RX7100PS supports Laserjet emulation to a variable degree. Variable in the fact that an extra module must be purchased to allow for italic print in the standard supplied font! The fonts supported in Laserjet emululation mode are Courier (2 types) and Line Printer, all supporting bold printing, but not italic unless an additional font card is purchased. The font cards are #30 each and allow different fonts to be accessed - albeit at a hefty price.

The unit is small, compact, and it takes up the same desk space as a 24-pin dot-matrix printer. Laser printers do not print continuous form paper, but a previous limitation on low cost units was that only one paper bin could be inserted at any given time, and when printing a document on different paper, say between blank paper and letterheads, a swap of paper was required. The Fujitsu has two bins, each of which can hold about 150 A4 loose-leaf pages. Selecting between the bins is achieved through software control or by pressing a panel control 'bin select' button when the printer is off-line. The control panel features a LCD display for information on the RX7100PS's status and selection of all of its settings is achieved by using a SELECT/PREVIOUS/NEXT approach.

Apart from the inability to access italic typeface without an additional font card, the only operational difficulty which arose was that the printer did not automatically print the last page of a document. After enquiring I was told that it was because the printer does not detect incomplete pages (signalled by a form-feed character). The document must first be saved, or alternatively switched off-line and manually form-fed (using the control button!).

The Fujitsu RX7100PS is an excellent, and now relatively inexpensive, Postscript printer featuring 300 d.p.i. resolution and 2MB of RAM which operates at 5 pages per minute. However, its operation in Laserjet emulation left a little too much to be desired for that purpose alone.

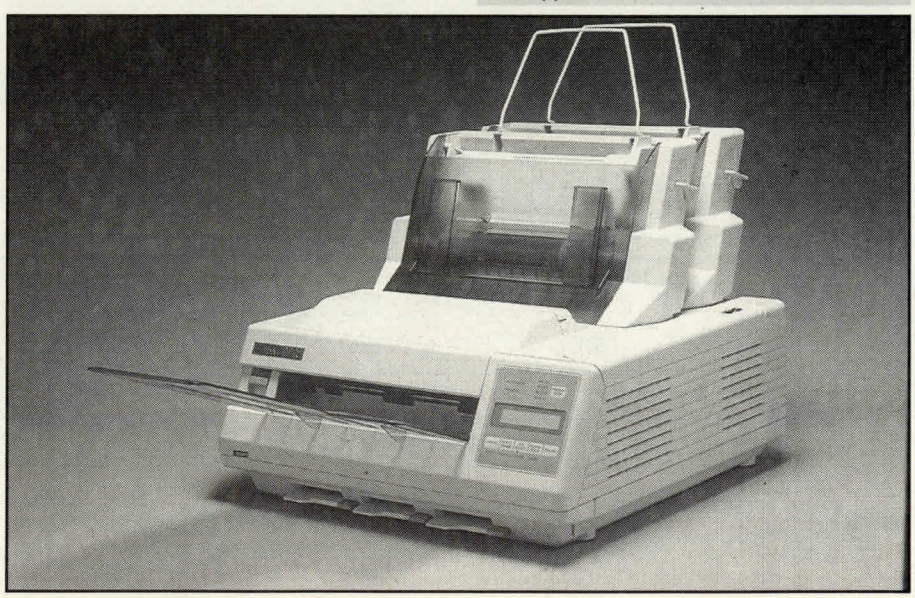
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Postscript can be thought of as being a printer driver, in which the applications written can utilise the power it holds by employing a command language. The Mac supports Postscript as its standard printer interface language, and as a result all of its software including word processors, utilities, and graphic packages output onto Postscript. However, Amiga software does not readily support Postscript, and has different standards, the most popular being Epsom emulation.

Postscript printers, are in general, more expensive than their non-postscript (or Laserjet) counterparts because the firmware (software in ROM), which translates the commands, must be licenced by the manufacturer of the printer and a fee paid by them for its use. The licencing fee is also the reason companies, such as Kyocera, have developed their own command language (Prescribe) and others have adopted Hewlett Packard's Laserjet driver as a standard printer driver for lasers.

One of Postscript's biggest assets is its outline fonts, which are vector graphic as opposed to bit-mapped.



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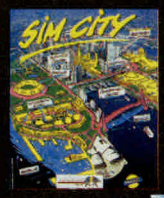
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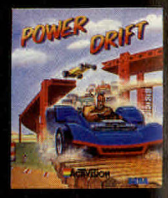


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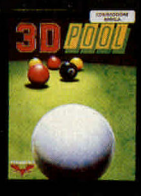
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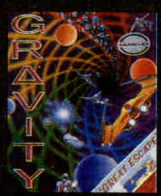
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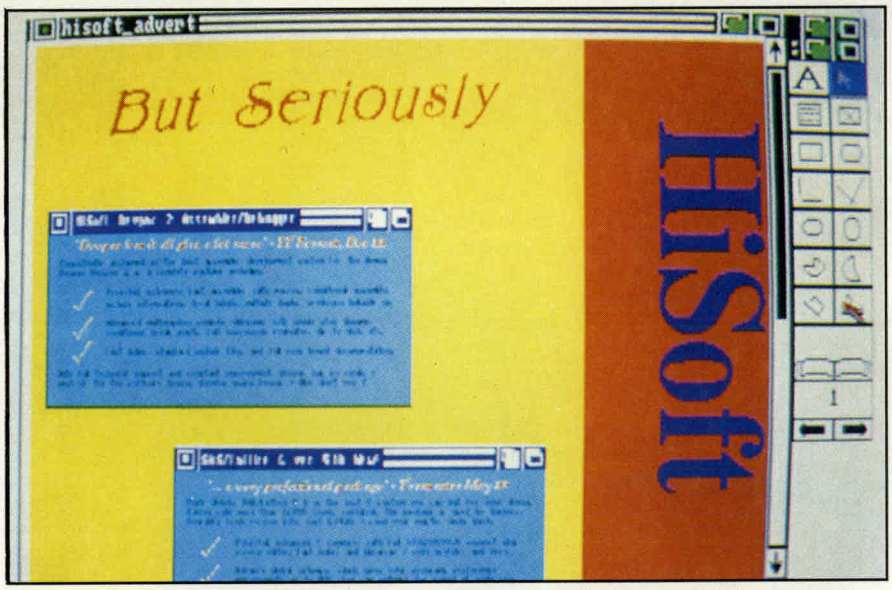
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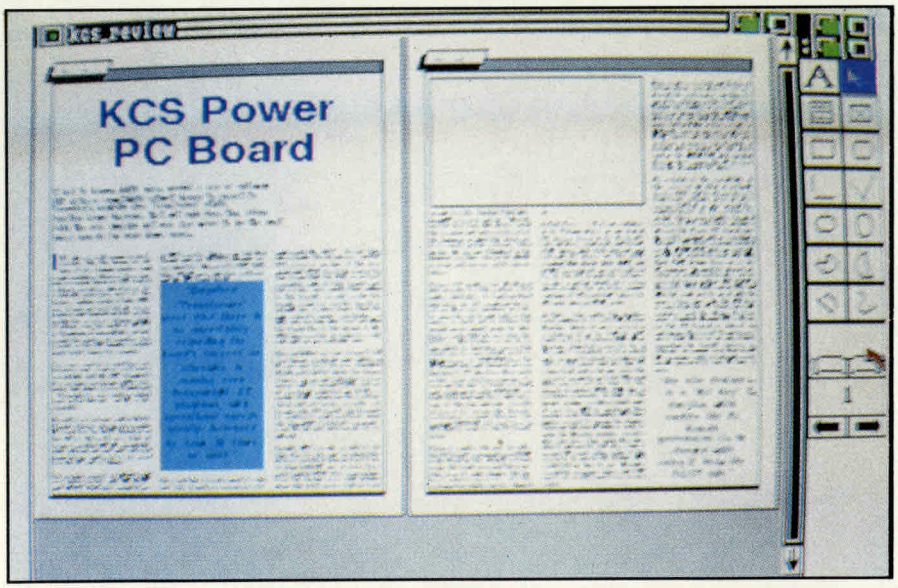
Jonathan Living tests this updated version of Softlogik's 'Tools To Dream'...

Soft Logik has aimed PageStream at both the amateur and professional markets by making it possible to run the program on a 1MB Amiga. However, due to the program, font data and specialist printer drivers being split across 4 disks, a 2MB Amiga with a hard-disk and even possibly a faster processor will realistically be required to make the program "pleasant" to use. PageStream can be started in 2, 4, 8 or 16 colour medium or high resolution screen modes, depending on how much memory you wish to conserve. Documentation for PageStream is provided in the form of 2 manuals - a "quickstart" booklet and a 260 page user guide. Both proved to be quite useful - the main text acting as a reference for all the program functions and the "quickstart" booklet managing to do just that.

The program corrects many of the omissions from earlier versions of this and other leading DTP packages - several documents can now be opened simultaneously (memory permitting) and page viewing modes include a facing-pages option. Intelligent page numbering has also been implemented, as has the ability to use any of 3 types of outline fonts. Supplied as part of the font collection are 8 Soft Logik outline fonts and 3 Agfa Compugraphic fonts (originally used by Gold Disk), both types reproducing with near-laser quality on all output devices, right down to 9-pin machines. PageStream will also support PostScript type 1 and 3 fonts, and in the former case, downloadable PFB (Printer Font Binary) outline font files can be interpreted and output to any non-PostScript printer.

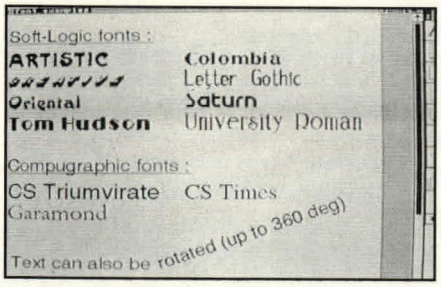


"The master page can be switched off or on and in the latter case, any detail drawn on the page will "show-through" on subsequent pages"



Select "new" from the file menu and after specifying the page size (up to 1200 feet square!), a blank page will appear. A "bleed-area" surrounds the page (which is also presettable by the user) and represents a free work-space for text and graphics. Magnification can be user-specified between 15 and 1500% and there are a number of page attributes which can set before layout starts. Vertical and horizontal rules and a grid can be made visible and are both defined using a range of measurement units - from the more usual inches, centimetres and picas to the rather strangely named ciceros and didot points!

Creating additional pages is achieved simply by increasing the page number



using the right-facing arrow in the toolbox. Decreasing the page number past page 1 causes the master page to be displayed. The master page can be switched off or on and in the latter case, any detail drawn on the page will "show-through" on subsequent pages. Inserting the page number on the master page will yield the correct number showing through on pages 1 to 1024 (the maximum number possible). Double sided documents, used to produce facing-page layouts, have both left and right master pages. Clearly, this is a

"Object text is created by simply clicking the text pointer on an unused part of your page or bleed area and typing away"

very powerful feature for creating standard layouts such as this magazine, which has a standard border and "Test Drive" (or similar) logo line for each page.

PageStream recognises two types of page elements - "text columns" and "objects". Text columns can be created and linked automatically on the page by using the "create columns" option and specifying the number required, the page margins and the inter-column spacing (the "gutter"). Manual creation of columns is possible using an icon from the toolbox and these can also be linked to existing columns (allowing text flow from one column to the next) using the manual linking option. Text can be entered directly or can be imported, using a variety of formats including straight ascii, WordPerfect, Excellence! and ProWrite files. Column outlines can be switched

"The immensely flexible capabilities of PageStream for page creation must be attributed, at least in part, to the accuracy with which graphic detail is stored and the method used for defining colours"

off or on, as can special "headers", one of which contains the column number and the numbers of those it is linked to. Column tabs can be set by clicking the text pointer inside the tab header - a very useful feature.

Objects, on the other hand, can be text, structured drawings or graphics. Object text is created by simply clicking the text pointer on an unused part of your page or bleed area and typing away. Both the text and its background can have fill patterns (chosen from 39 preset and one user definable design) and can also be coloured using any of the palette colours. The same possibilities exist for structured drawing objects, which include locked and random lines, circles and ellipses, arcs, polygons and even a free-hand tool, with line types and thicknesses also user definable. Graphics imported as objects can be in a number of file formats, including IFF (64-colour, HAM mode and 24 bit pictures also possible), TIFF (the "standard" for page and hand scanners, originally created by Aldus and MicroSoft), IMG (Gem image), GIF and MacPaint formats, amongst others. Structured graphics can be imported from packages such as Aegis' Draw 2000 and Gold Disk's Professional Draw. PageStream will also import files saved using the industry standard EPS (Encapsulated PostScript) format.

Objects in general can then be rotated, slanted or twisted and can also be grouped - allowing a single, movable object to be created from several individual ones - another invaluable feature which allows page layouts to be changed in blocks, rather than object-by-object.

The immensely flexible capabilities of PageStream for page creation must be attributed, at least in part, to the accuracy with which graphic detail is stored and the method used for defining colours. While Amiga hardware will only legitimately cope with a maximum of 16 colours in medium and high resolution modes, these are kept entirely separate and are used for the best screen approximation to the palette (actual) object colours.

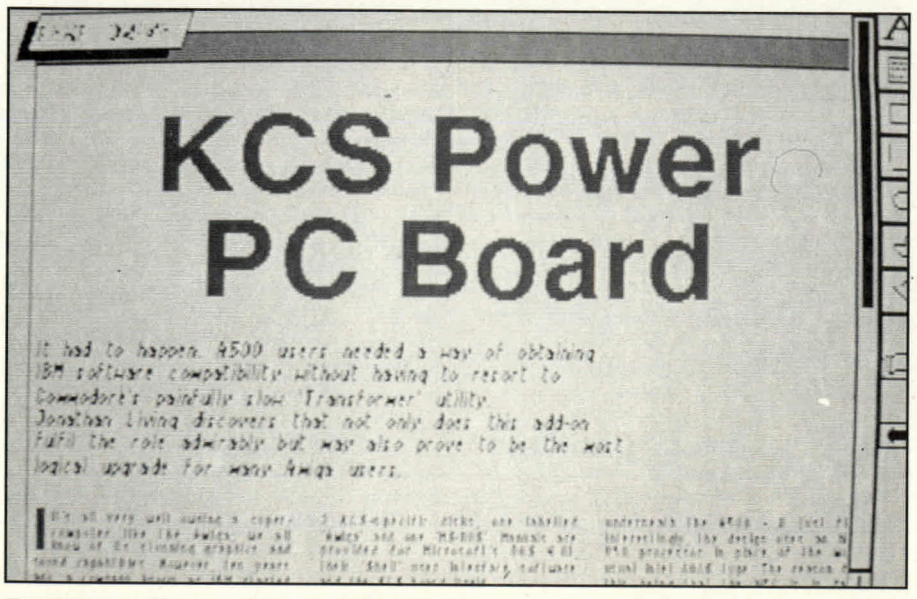
Palette colours specify the precise colours of all page objects and are user definable as named "pens". For example, a colour such as "Burnt Sienna" could be created, with the palette colour defined using RGB (Red, Green, Blue), YMCK (Yellow, Magenta, Cyan, Black) and other methods, to an accuracy of 0.01% per component. With a three component system such as RGB, this gives exactly one million-million colour combinations, which provides some indication of the ease with which PageStream can import HAM (4096 colour) and 24 bit (16,777,216 colour) IFF graphics files. Of course, on screen, "Burnt Sienna" may be approximated to

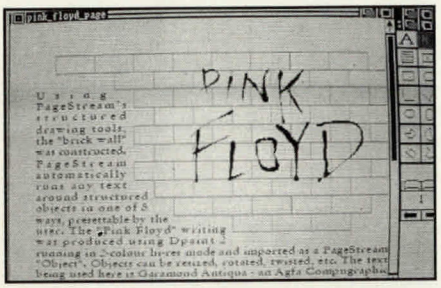
"I remain absolutely amazed by the versatility of this program and the range of almost unlimited effects that are achievable using the graphics and text tools"

Orange - the nearest colour match using the screen palette, but this is irrelevant - your printed page will have precisely accurate shades, either using a colour or black and white printer.

To cope with this almost excessively accurate colouring system, Soft Logik include a comprehensive set of printer drivers which write directly to a parallel or serial printer, bypassing the usual "preferences" configured prt: device. This not only produces faster and more accurate results than Commodore's own 1.3 drivers, but also allows a different printer configuration to be set up specifically for PageStream, enabling the normal "preference" settings to remain unchanged.

While PageStream supports a number of convenience features, such as macros (assigning strings of key equivalents for selecting menu options to any func-





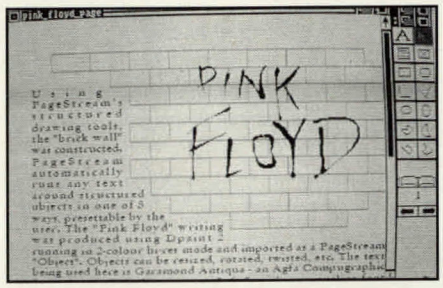
tion key) and style tagging (being able to name and save commonly used sets of text attributes, such as point size and paragraph indenting, etc), there are a few facilities I would like to see added to the program. Firstly, kerning (altering the spacing between characters) can only be performed for pairs of letters at a time, whereas some packages (such as Gold Disk's PageSetter V2.0) allow both kerning and leading (line spacing) to be changed using the cursor keys, once the desired line(s) of text have been highlighted. Secondly, there is no pointer co-ordinate read-out when using PageStream's structured drawing tools. While the drawing tools will "snap" to the defined grid, the user has no idea of the position of the pointer, although you can make a guess from the vertical and horizontal rules.

PageStream also has one or two operational quirks which detract from the otherwise solid feel of the program. The spelling checker, for example, seemed very selective in its acceptance of words, through not allowing for different word endings - it rejected about 1 in 10 words in a piece of text which both KindWords and Excellence! had previously confirmed as having no mistakes. Further, when bitmapped graphics are imported

"PageStream V2.1 scores a very high mark for providing professional-standard desk top publishing at a realistic price"

and positioned partly over coloured objects on the page, the program fails to mask-off the colour of the object in the overlap-region on printouts, so that colours are contaminated with the background the bitmap has been overlaid onto. This is easily cured however, by drawing a solid, neutral-coloured (white) block over the bitmap and altering its depth so it falls behind the graphic (using the "send to back" menu option), thus blocking the background colour.

The only major and consistent bug found with the program was encountered when using the Compugraphic fonts - especially the Triumvirate (Helvetica look-alike) and Times Roman typefaces. At 100% viewing magnification (actual size), font sizes below around 30 points failed to be constructed on screen. Compugraphic fonts smaller than 30 points, typed onto the screen at high levels of magnification, caused the Amiga to lock-up when the page was viewed at actual size. The selective nature of this bug (with Triumvirate and Times CG fonts but not with Garamond) suggests corrupt data files may be the cause of



the problem, rather than bugs in the program code. But in either case, this is not the sort of thing someone who has just spent #150+ on a DTP package wants to encounter...

Overall though, PageStream V2.1 scores a very high mark for providing professional-standard desk top publishing at a realistic price - only a third of what Xerox or Aldus will charge you for a similar product running on an IBM or Macintosh. I remain absolutely amazed by the versatility of this program and the range of almost unlimited effects that are achievable using the graphics and text tools. It's a wonderful but also somewhat sobering thought that the brilliance of your final page is limited by your own creativity and imagination, and not the capabilities of the software you are using. At the end of the introduction in the main manual, Soft Logik have included a rather poignant message - "We give you the tools to dream". I think, with PageStream V2.1, they might be right.

J.L.

Price: £199.00
Contact: **Soft Logic, Five Chancery Lane, Clifford's Inn, London EC4**

Second opinion *by John Walker*

Much to my surprise, for I was unimpressed by the bug-ridden earlier versions of the program, I found that PageStream 2.1 outperformed Professional Page 2.0 on almost every level.

It has at last got rid of its dependence upon Soft-Logik's proprietary outline fonts which were inferior to Pro Page's AGFA Compugraphic Intellifonts.

For PageStream 2.1 can now use AGFA Compugraphic fonts as well as Adobe PostScript fonts and Soft-Logik's own fonts which are unusual decorative typefaces useful for creating posters. Uniquely, it allows you to output the PostScript fonts to any printer.

Indeed, in almost every aspect, PageStream now offers so many alternatives that at times it seems like overkill. You can not only have measurements in inches, centimetres and picas but also in millimetres, ciceros, didot points, metric points and absolute points. I'm surprised it didn't add rods, poles and perches.

This excess often pays off. It offers text and graphics rotation that no other desktop publishing program on any computer can match. You can rotate, twist and skew text in increments of one degree. Compare that to the Macintosh standard DTP program PageMaker, a program that costs more than three times as much, which allows you to rotate only text in 90 degree increments.

Soft-Logik has taken the trouble to release a UK version of PageStream. All its menus feature English spellings, such as "colour" and "centre". But something has gone slightly wrong with its English spell-checker. While it recognises English spellings, it still regards American ones such as "color" as correct.

As someone who uses to a PostScript-compatible laser, I was a little irritated to discover that PageStream does not come with the necessary screen fonts and files to use the 35 fonts resident in my printer. These are supplied on a separate PageStream Fonts Plus Pak at an extra cost.

Its list of compatible word processors ignores many Amiga favourites. While text can be imported in ASCII format, the only ones it supports directly are ProWrite, excellence!, WordPerfect and First Word.

Typographic control is exemplary. You can scale fonts and control leading and footing in minute increments – certainly finer than you need when outputting to a laser printer. I like the fact, too, that you can open as many documents as memory allows, and cut and paste between them.

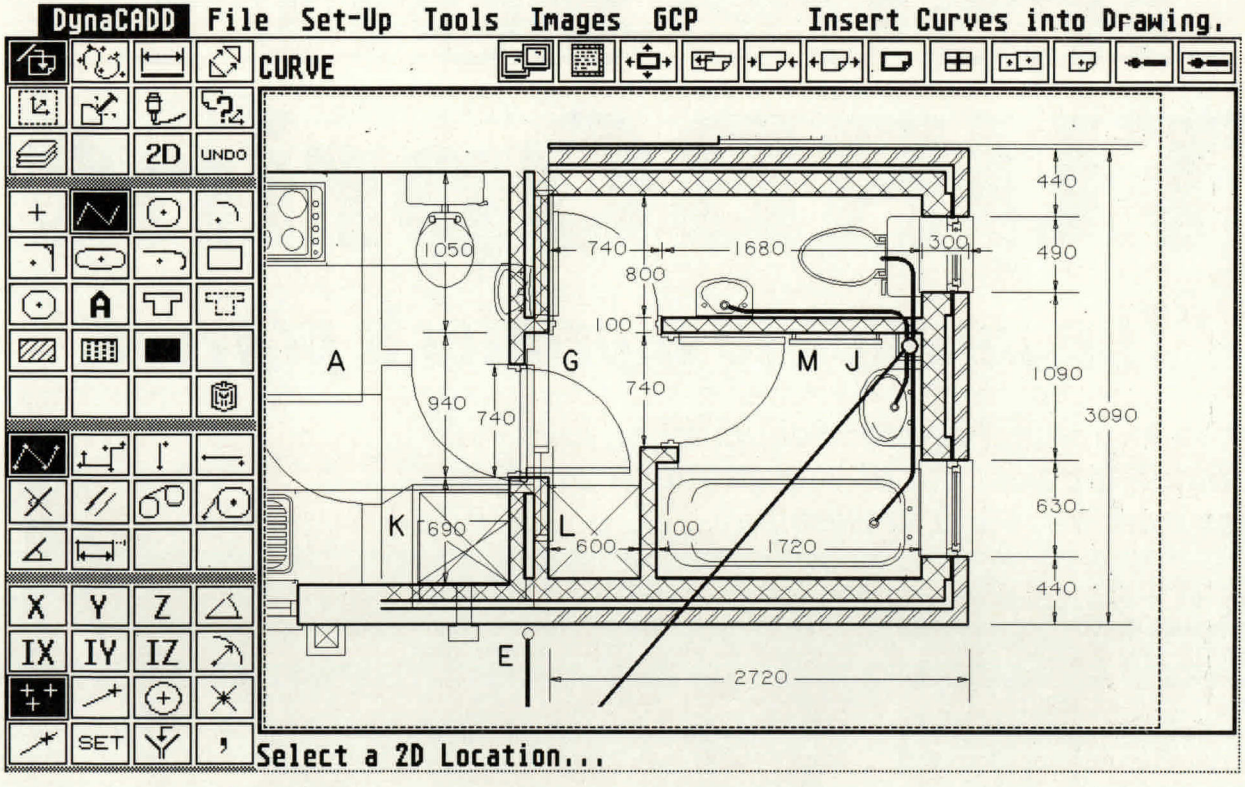
And as in previous versions of PageStream, the number of typestyles available is amazing – apart from the more usual italics, bold and so on, you can have text backslanted, shadowed, light, double underlined, mirrored, reversed, upside-down, with strike through and sub- and super-scripts.

Only in colour handling, especially in outputting four colour separations, does it lag behind Professional Page – and that, I guess, is something that concerns only a handful of Amiga desktop publishers.

There's still room for improvement, of course. There's no indexing facility, nor any means of tying text and graphics together so that they move as one when changes are made to a page.

But it is an impressive program that gives complete typographical control over any document and lets you achieve painlessly many intricate effects. It is, for the moment, the new heavyweight champion among Amiga desktop publishing programs.

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IrseeSoft's TURBOprint

"The answer to a printer's prayers"

Our man in Berlin, Hartmut Schumacher, tells you how to get the best out of your printer – with two utilities from IrseeSoft in Germany...

Yes, the Amiga is THE graphic computer. But don't you recognize the following situation?

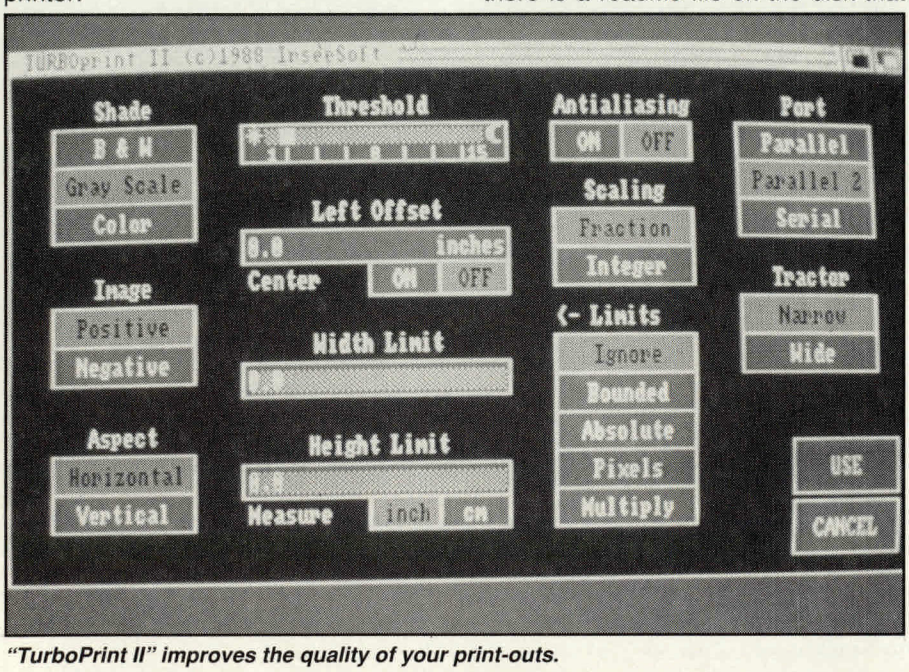
You demonstrate the Amiga's graphical abilities to a friend and for this purpose you show him some great digitized or painted pictures — and then this (naive or insidious) friend asks: "And can you put this picture to paper?"

This is the moment of truth — and all you can tell him is: "Hmm, . . . well, . . . yes, sort of . . ."

In fact, the correct answer is a straight "no". One of the Amiga's weak points is the printer drivers: Even though the drivers of the Workbench version 1.3 are a great improvement upon the 1.2 versions, it still is virtually impossible to get a decent print-out of the graphics you can create with the Amiga — especially if you own a rather cheap 9-pin matrix printer.

Never fear: Irseesoft's "TURBOprint II" will come to rescue. This program (which costs about £33) is a substitute for the original printer drivers from the Workbench disk. That means all outputs which normally addressee the printer device are now controlled by "TURBOprint".

IrseeSoft's printer drivers accelerate the printing processes and give better results. Nevertheless, despite this, these new printer drivers are shorter than the original Workbench drivers — because they have been written in Assembler. The drawer "printers" on the "TURBOprint" disk contains drivers for printers (including some laser printers) from the following companies: Canon, Epson, HP, Nec, Okidata, Seikosha and Star. If you you can't find the name of your printer in one of these drawers there is a readme file on the disk that tells you which driver can be used as a substitute.



"TurboPrint II" improves the quality of your print-outs.

Two Preferences Screen

But "TURBOprint" does not only consist of a new set of printer drivers: on two menu screens the user can change the program's preferences. These changes may also be saved to a configuration file.

"Once you have seen two print-outs of the same picture with and without gamma correction, you know what this option is worth"

If you "only" own a black and white printer you can tell "TURBOprint" which patterns to use to convert colours into shades of grey.

The brightness and the contrast of the print-out can be adjusted, as well as the ratio of the height and width (which is necessary with some printers), and you can also change the intensity of the three basic colours.

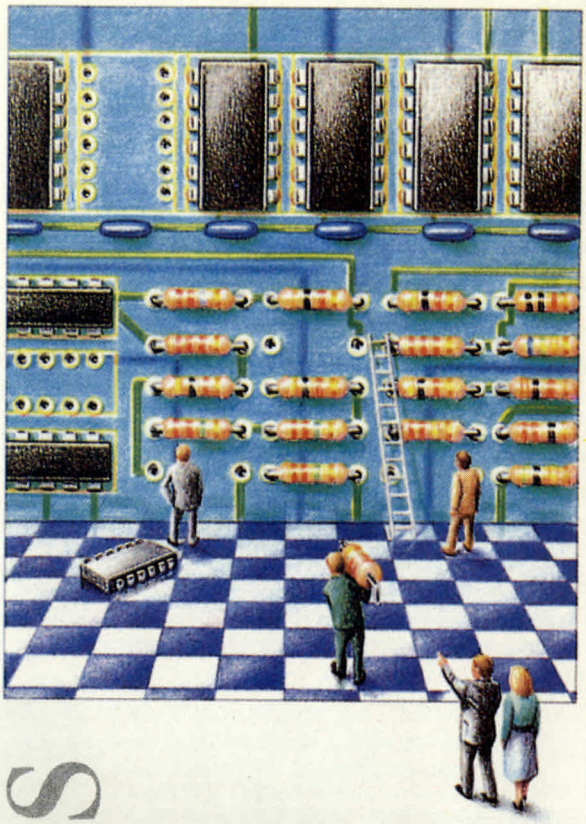
All images may be turned about 90 degrees or printed negative. The anti-aliasing function smooths the sharp edges of diagonal lines, and the FastMemLast option is handy with programs that have problems with memory expansions.

Resident Functions

Once the preferences are set and the program is started it works quietly in the background and improves and speeds up all printer activities that normally would

Continued on page 114

Amiga Repairs



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AMIGA REPAIRS



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The Seven Deadly Sins of Desktop Publishing

Hartmut Schumacher takes a user's view and offers some basic rules for all DTP programs...

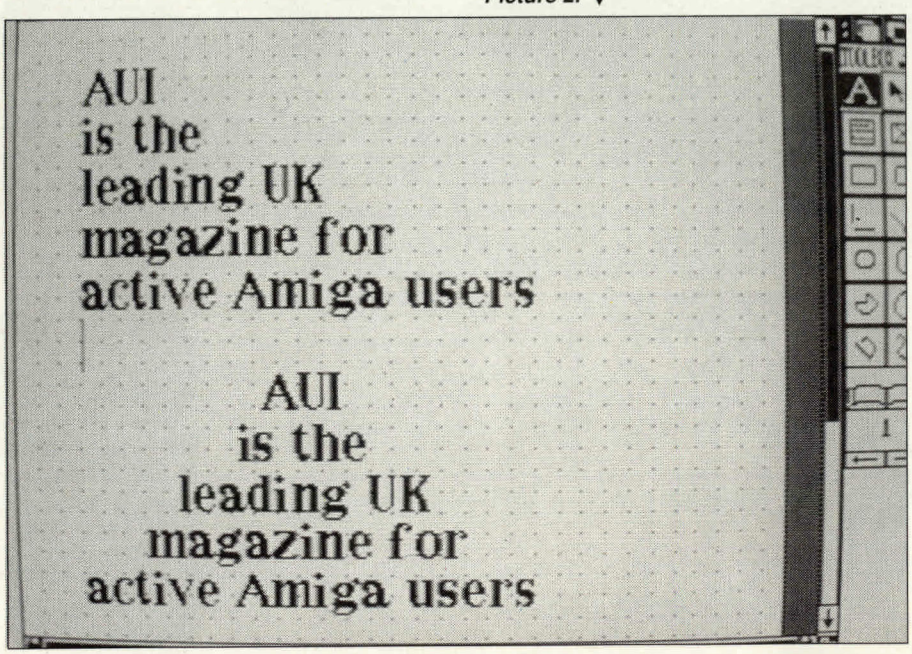
The Amiga user has the choice between several good Desktop Publishing programs: "Professional Page" is - as its name implies - the most professional of all Amiga DTP programs, followed very closely by "PageStream", whereas "PageSetter II" (see September/October issue of ***AUI***, page 21) is meant for the user with a smaller purse who nevertheless needs high quality output even on 9-pin printers. However, some word processors (like "excellence!" and "KindWords", and now "Prowrite 3.0.") offer basic DTP features.

But, of course, a good - or even a great - program is not enough: To create professional-looking documents you also need some typographical knowledge.

Let's take a short look at a user who has just purchased one of the above mentioned Amiga DTP programs: He is so enthusiastic about the many possibilities this program offers (lots of fonts, styles, and patterns) that he decides to use ALL of them. I think most of you have already seen the results of such uncontrolled enthusiasm: a piece of paper which is so ill-designed that nobody wants to take a closer look at it, no matter how excellent the text on it may have been written.



Picture 1.



Picture 2.

Don't despair, however: we can show you how to avoid the most common sins of DTP. (The screen shot examples in this article have been created with "PageStream" [pictures 1, 2, and 4] and "excellence!" [pictures 3 and 5].)

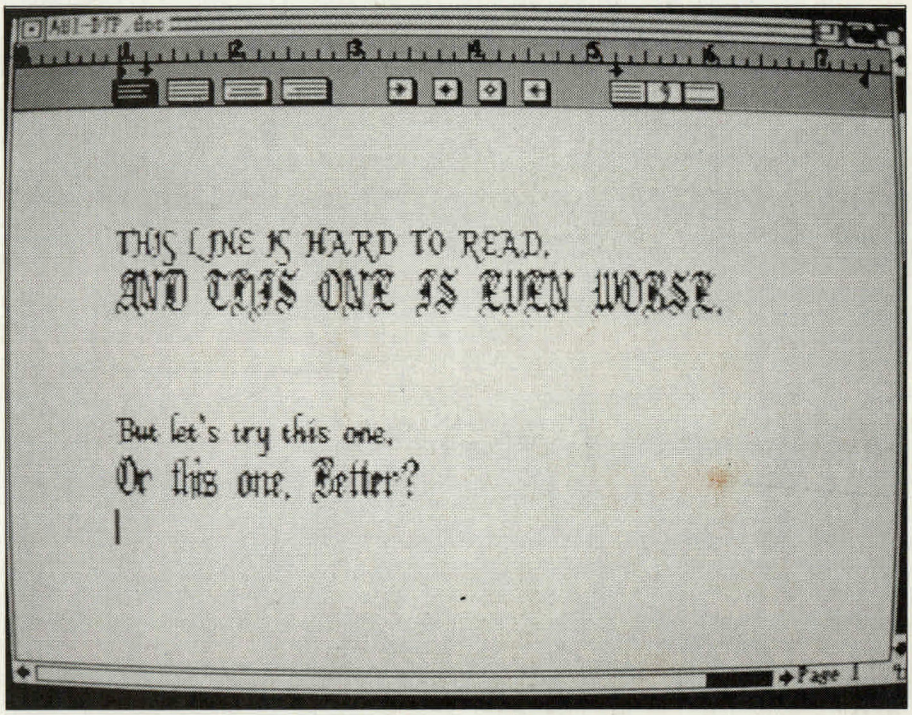
1. Headlines

Let's start at the top of a document: the headline.

Avoid headlines that look like steps or like pyramids (see picture 1). In both cases it is difficult for the reader's eyes to concentrate on the contents of the headline - instead, the eyes follow the outline of the "steps". In order to avoid this, rearrange - if possible - some of the words in the headline, but don't use split syllables (which also distract the reader's eyes).

2. Choose the Right Font

You can't use every font for any purpose. Each font has certain attributes that evoke associations and feelings which have to be considered. If you use a very delicate font (like Garnet) for a visiting card of a road construction company or a "heavy" font (such as Ruby) for the visiting card of an antique shop this may unconsciously irritate the reader (see upper half of picture 2). Use these fonts the other way round, and everything will be fine (see lower half of picture 2). If you are in doubt, choose a neutral font like "Helvetica".



Picture 3.

3. Calculated Simplicity

Don't confuse the reader with too many unusual attributes. If you use fonts like "Emerald" or "Sapphire" which are very different to the "normal" latin letters, then don't add other possibly irritating attributes such as capital letters only or italics that would make the document almost unreadable (see picture 3).

Even if your DTP program offers you a wide range of fonts you should restrict yourself to only two or three fonts on one page. This fonts may be used in different sizes to obtain variety and to attract attention. Pages with four or more different fonts have a very disquieting effect on the reader (see picture 4).

4. Emphasising

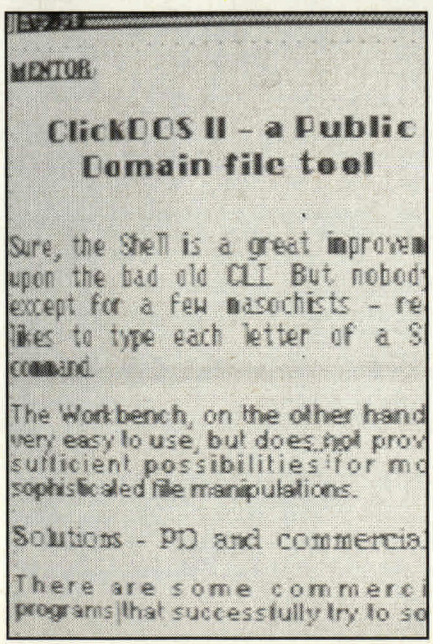
Don't use more than one way of emphasising a word or a paragraph. That means don't add the attributes "italics" or "bold" to a word that is already underlined. This combination of attributes will be disturbing to the reader (see picture 5).

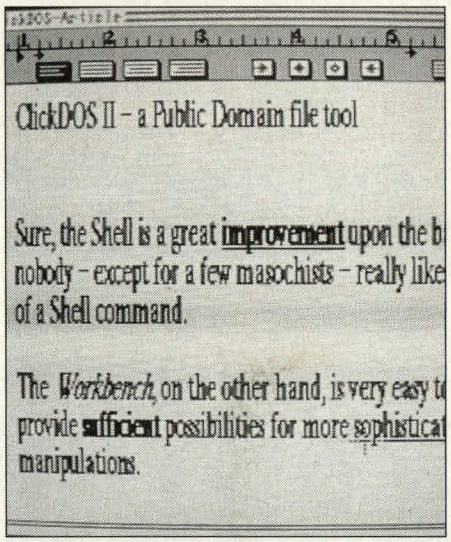
Be consequent: Don't use two ways of emphasizing in one document - unless there is a good reason for it. For example, you could print foreign words in italics, and "normal" English words you would like to emphasise could be made "bold" or "underlined".

5. Line Spacing

Use columns and be generous with the line spacing. Long lines and narrow line spacing make it difficult to read a document. Sometimes, though, you have to break one of these rules slightly to be able to get more text on one page - but on no account use long lines and narrow line spacing at the same time.

Picture 4.





Picture 5.

6. Pictures

If you load digitized pictures into your DTP document, you have to be careful when you adjust the size of the picture. Avoid reducing or enlarging only one dimension. This would lead to an disproportional image and looks especially strange when the picture shows a person. So be sure to change the horizontal as well as the vertical dimension of pictures if you don't want to transform rather ordinary looking people into beansticks or balloons.

If you use a bitmap-orientated graphic program (like "Deluxe Paint") to create pictures then don't write the caption with the paint program - this would result in a ragged output of the words even on an expensive PostScript printer. Instead load the drawn picture into the DTP document and then write the caption with the word processing functions of this program.

This difficulty doesn't arise when you use a vector-orientated graphic program like "Professional Draw". The size of pictures created with this program can be changed without reducing the quality of the output.

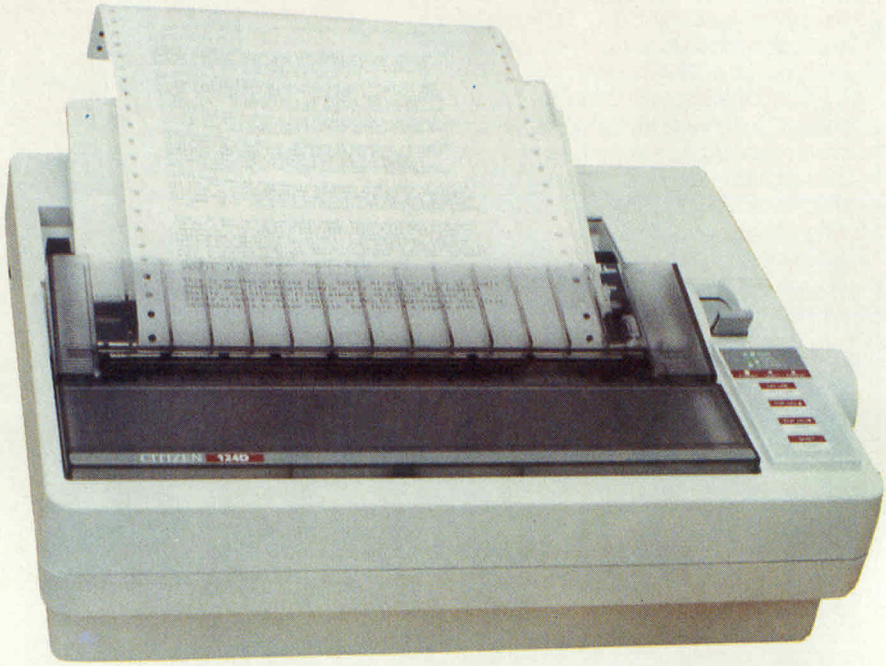
7. Efficiency

We understand and share your enthusiasm about all the fantastic possibilities of Desktop Publishing. But consider this: a well designed layout with an eyecatching headline, different font styles, digitized pictures, and several columns is great, but - is it necessary? Is it worth all the time you spent on it? In some cases - for example if you "just" have to prepare a paper for school or university - a rather simple layout may be sufficient - and is less time consuming.

H.S.

Win A Classy 24 Pin Printer

CITIZEN 124D Competition



Last month we reviewed Citizen's latest 24-pin printer, the 124D 24-pin entry-level model. This month *AUI* and Citizen give you the chance to win it.
All that you have to do is answer the following questions. (If you find any question too difficult you probably haven't read the review!)

Answer the questions to reveal the secret attribute, of Citizen's 124D, from the anagram of the boxed letters

1) Which of ***AUI*** categories is the Citizen 124D reviewed? _ _ _ _ _ _ _ _ ☐ _

2) What type of sheet-feeder handles many single sheets of paper? _ ☐ _ _ _ _ _ _ _ _

3) While referring to printers, what is another common term used instead of Dot Matrix?

_ _ _ ☐ _ _

4) The Citizen 124D supports the most popular typewriter font as standard.
What is this font called? _ _ _ _ _ _ ☐ _

5) What sort of quality does the 124D output? ☐ _ _ _ _ _

The secret attribute of the Citizen 124D is its _ _ _ _ _

Send your answer on a postcard, letter, or this page (photocopies accepted) to:

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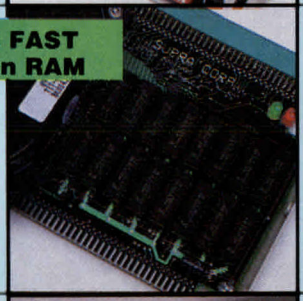


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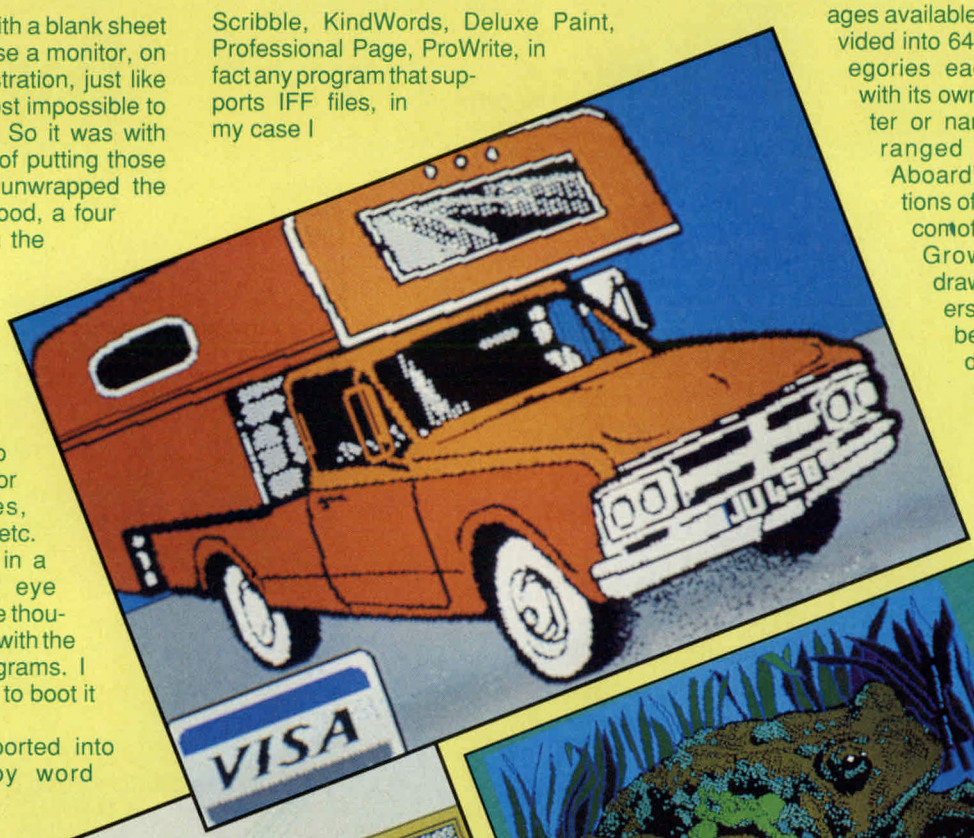
Classic Clip Art from SoftWood

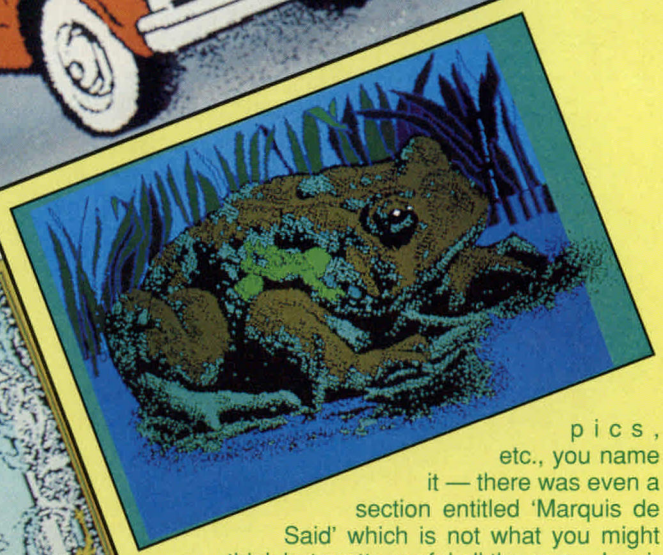
Consultant Art Editor and self-proclaimed inexpert Amiga User, Graham Baldock, finds, at last, what to do about that blank sheet. No doubt to the pleasure of his wife, Janet . . .

If you are ever faced with a blank sheet of paper, or in this case a monitor, on which to start an illustration, just like any author it can be almost impossible to pen that very first word. So it was with tremendous anticipation of putting those days behind me that I unwrapped the latest arrival from SoftWood, a four disk set that comes with the first volume of SoftClips Classic Clip-Art. I wasn't disappointed.

'Clip Art' is public domain images to which you add your own colouring or backgrounds, and which can be used to help produce illustrations for posters, programmes, books, or advertisements etc. Just like a kid let loose in a candy store, I ran my eye through the more than one thousand images which come with the first volume of nine programs. I couldn't wait to get home to boot it up!

SoftClips can be imported into documents created by word processing or desktop publishing programs such as Scribble, KindWords, Deluxe Paint, Professional Page, ProWrite, in fact any program that supports IFF files, in my case I used D-Paint III.







The disks come with a User Manual and Image Directory which show each of the images available. They are divided into 64 different categories each identified with its own number, letter or name and they ranged from 'All Aboard' — illustrations of American locomotives to 'You Grow On Me' drawings of flowers and trees. In between were different borders, logos, birds, bugs, flags, dogs, faces, sports pics, etc., you name it — there was even a section entitled 'Marquis de Said' which is not what you might think but pretty useful all the same. Inevitably, considering this package comes from the renowned Softwood, there was a US bias — a map of America showing the outline of each State, turkeys, cowboys, a dollar bill, etc.

The instructions for use were extremely brief but simple, and I very quickly had my first image on the screen, a large truck. All the images are loaded in black and white, ready for you the user to add colour as required. The first few times I made the

mistake of agreeing with the message that appears on the screen with regard to the format and ended up each time attempting to add colour when all I had available to use was black and white, as that was the format inwhich all the drawings were created.

Once I got going all was well, with only a few hiccups on the way. Unfortunately many of the drawings when they popped on to the screen, ended up partly hidden by the instruction bar at the top and so I had to keep pressing F10 to be able to grab the whole picture and move it into the centre of the screen before it was ready for colouring, and making additions to, just like a child's picture book. Also, unless you are in high-res mode, I found my large truck was rather *too* large, as bigger illustrations tend to get bits chopped off and I lost the front end off the bonnet. When this happens you have to change the screen format by clicking on the screen format gadget, click on 'screen' and OK. The message then asks if you want yor image reduced to the size of your screen. So click on 'yes' and you can find yourself with a rather squashed image which, in the worst case, has to be brought back into shape by using the shape command in the brush mode. It's all rather laborious especially if you make a few mistakes, so I recommend you save your newly reconstructed image as soon as you are happy with its new state.

By now I was really getting used to the program and wanted to do lots more, starting to swop disks around with a passion. The chimpanzee came next and I couldn't resist drawing him in a nice juicy banana for company. Then I tried my hand at a frog, drawing in a few reeds as a background. Memo to the Editor 'I need someone to buy me a third drive for my Amiga', as I am fast developing computers wodiskitis. (Buy a hard disk, G.B. — Ed.).

The images when enlarged, although extremely well formulated, are fairly basic and only intended to provide a very fundamental start to your drawings; the delicate touches being left up to you.

A word of caution to the unwary — when I went to save my pictures, the prompt asked if I wanted to overwrite the existing image — and I almost fell for it, nearly spoiling my master in the process. All the disks in the envelope are non-write protected, so make sure you copy your disks first or, at least, switch on the write protection gadget.

I feel that if the next 8 volumes to come along have the same appeal with their subject matter as this first set, I will thoroughly enjoy building up my personal graphics library and will, I'm sure, get tremendous use out of it.

I would recommend this series of programs to professional and amateurs alike, and, who knows? — you too may never again be troubled by that blank sheet of paper.

G.B.







A) My first image was a truck which, in low-res mode, I had to distort slightly to fit on the monitor. The Visa card was an embellishment from another disk.

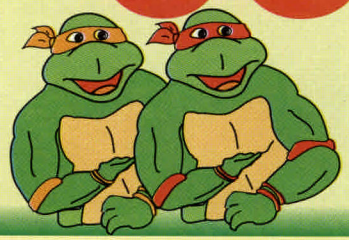
C) Fun with a frog on lily pad.

D) I couldn't resist using the 'spare' facility, saving the main picture to 'spare', drawing in some extra detail, like the winking eye and the poking out tongue – then pressing 'J' to cfeate an animated effect. Try it for yourself it's great fun. The woman's head, by the way, had to have each strand of hair flooded separately because the black pixels joined up at each end of the strands.

E) Ludwig von Beethoven was perhaps my overall prefence. I grabbed a border from disk number 1, flipped it a couple of times and then popped in Ludwig from disk 4 in the 'Small Faces' section.

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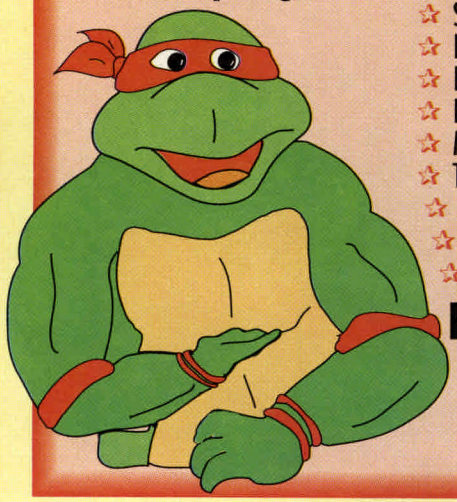


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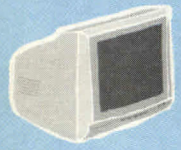
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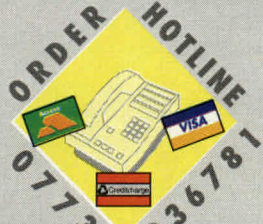
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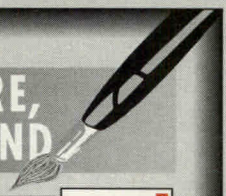
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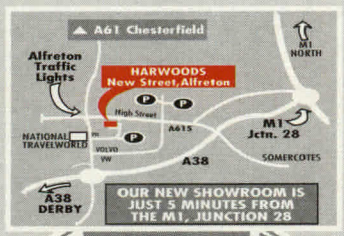
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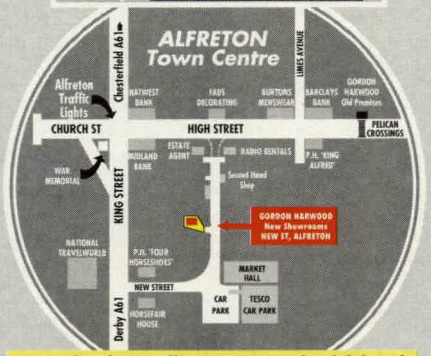
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UNDERSTANDING THE AMIGA

1. The Hardware

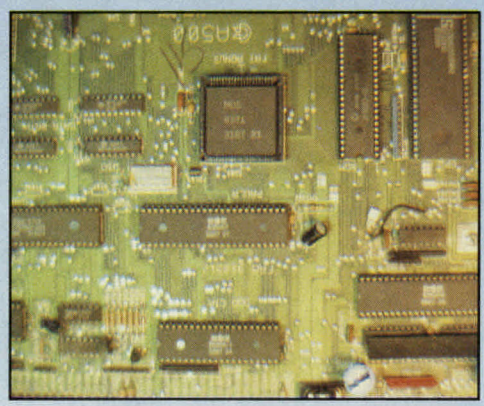
Hittin' the Metal

Mike Nelson giving you the lowdown on the fundamentals of the Amiga

The Amiga is arguably one of the best-equipped microcomputers on the market, and it is a combination of state-of-the-art hardware with powerful software to drive it, which makes the machine so enviable. This month, we shall cover the main capabilities of the various bits of the hardware, and in future AUI's take a look at the role of the operating system and how it all interacts.

The basic concepts regarding the Amiga hardware will be familiar to users of Commodore's older machines like the famous ' 64, in that storing data in registers will cause changes in what the computer displays or the sounds it makes. The BASIC language provides the "Poke" statement to alter the values in memory locations, and there are naturally equivalent mechanisms in other languages, such as C. Programming on "memory-mapped" machines is, in the final analysis, just a matter of putting the right numbers in the right place, and on the 64, this involved learning loads of wretched Pokes to set the screen border or move a sprite around. (Some of them, like 53272 or 59464, echo around my head even though I've not laid my two typing fingers on a '64 for years).

The Amiga is much bigger, and much better and, as you may imagine, the Poke statement



is used rather less than on its older brother, instead there is a massive operating system chock full of juicy routines to do the work for you. However, if you are to use these libraries of routines, you must understand what they do, even if the details of which registers are being altered are not readily apparent. Besides, the idea is to avoid prodding around in the chips! Programming in a multi-tasking environment means you must be prepared to give way to other code which may want to use the audio apparatus or write to the screen in some way. You can bend the rules sometimes, but we will see later how unpredictable and annoying this can be.

Where does the Amiga get its speed from? The Atari ST actually runs slightly faster than the Amiga, and so is potentially capable of doing more work in a given time, but everyone knows which machine is the most powerful. (Actually this is quite a bone of contention among Atari and Amiga owners; I'll say no more and let the computer do the talking!).



The secret of the Amiga's power is the existence of specially designed components, located on three chips and named (somewhat unhelpfully) Agnus, Paula and Denise. These chips control the graphics and sound of the Amiga and also much of the Input/Output. The crucial point about them is that they can work independently of the 68000. This unlike other computers which have to rely on the proc-



essor to update the display or sound chip and worry about disk access, giving less time for actual data maneuvering. In order for the custom chips to do this, they need to be able to read and write to the computer's RAM, a function usually exclusive to the processor chip. Such a system is called direct memory access or DMA.

The DMA principle is simple, but the electronics controlling it are complex as there are a number of potential problem areas. Firstly, if two or more components are capable of altering a common area of memory, how does the processor, for instance, know that the data it is working with is up to date, and not half altered by something else? The answer to this is that only one component is allowed access to the RAM at a time. Fine, but who gets priority if both want access to memory at once? By and large, the custom chips are faster than the 68000 at many tasks, and so they get the priority.

So this is the layout in very general terms, and it is time to put some real Amiga words into the discussion.

The Blitter

This is probably one of the most innovative features of the Amiga, and has yet to be included in other machines. The blitter is part of the Agnus chip and can be thought of as a very fast train, moving areas of data around at a speed rumoured to be ten times that of the 68000. The data can be absolutely anything, but is usually concerned with graphics, and BOBs (Blitter OBjects) are commonly used in games for representing large graphic characters. They are therefore an alternative to the '64's sprites, although the Amiga does support these too, as we shall see.

Moving data around quickly is nice, but the blitter really scores because of the flexibility it allows. For instance, you are not restricted to moving linear regions of memory, but can define a window within another area. Without this feature, BOBs would not be possible, if you think about it. Imagine a BOB on a screen: despite being a complex shape, such as a man, it is really a rectangle, defined by the maximum width and height of the outline, and to move it the blitter must be told these dimensions.

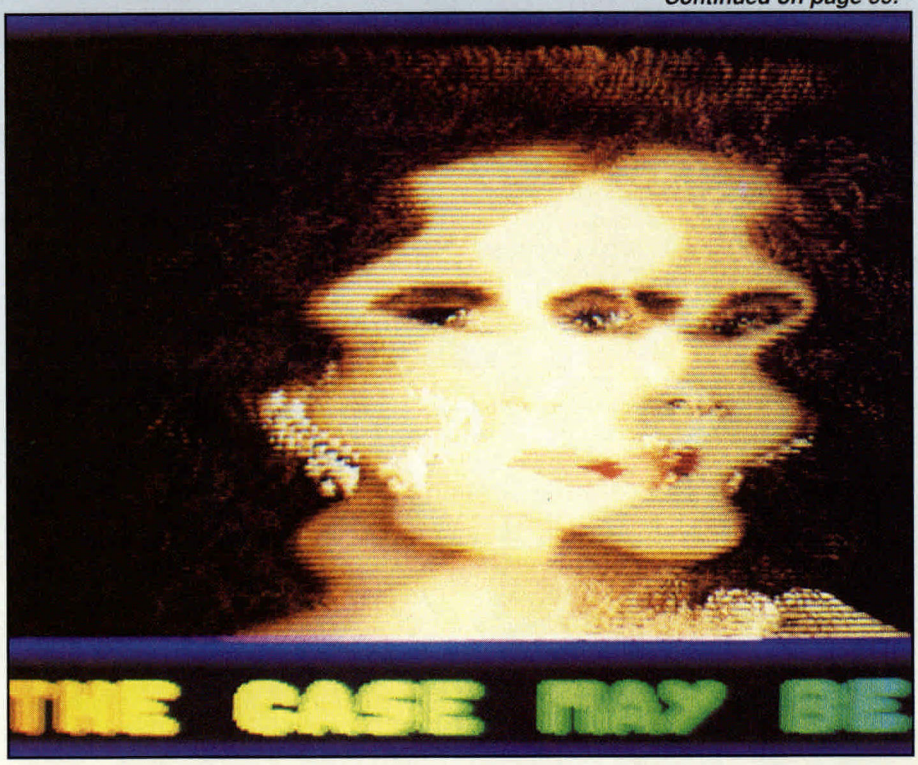
Another important feature of the blitter is the ability to perform logical operations on up to three sources of data, before writing the result into the destination. One use for this is to define transparent areas in a BOB. Going back to our man-shaped BOB-who-is-really-a-rectangle, we could program the blitter to let the background show through any blank areas of himself, just by setting the appropriate logic equation (called a "minterm"). While we are on the subject of BOBs, the blitter is also capable of detecting overlap between them, so collisions may be monitored for that blast 'em up game.

Line drawing is another of the blitter's specialties, again providing the blistering speed necessary for 3-D vector graphics games like Starglider. In addition to drawing the lines, the blitter is also capable of filling regions between them, with different modes for special effects. Again this is approximately ten times faster than a 68000 could manage, but the process is quite tricky to set up, showing that you never get something for nothing in computing!

The Copper

The graphics chip of the '64 (named the VIC-II) has an interesting ability to generate an interrupt whenever the beam which draws the display reaches a pre-determined point on the screen. Raster interrupts are used extensively in '64 games to split the screen into different regions which may have totally different display characteristics like resolution, smooth scroll position or whatever. This is extremely effective since the computer is able to switch these characteristics quickly and accurately enough to fool the television and eye about what is going on: the '64 changes screen modes before that region is drawn, but the bit already displayed remains un-

Continued on page 99.



Real Things; Humans

RGB Studios

A new animation release will jog your Amiga into life. Peter Lee uncovers the latest offering from RealThings...

Boldly going where no software artists have gone before, RGB studios have plumped for the hardest subject imaginable for their latest RealThings collection of animations - humans.

Previous releases in the series were Horses and Birds, which although beautifully animated had a lot of licence for artistic interpretation. With Humans, the East Sussex-based company have chosen a subject with which all their users will be familiar - themselves.

Whereas few people would know if a bird flexed its neck as it flew, or a horse ever had all its hooves off the ground at one time, everyone knows how a man or woman is supposed to look when they walk or run.

So with everyone a potential critic, RGB have taken great pains to perfect this tricky subject. And while it is a little rough around the edges in some respects, it still far outstrips my expectations for realism and content, and is going to save many hours of animation time as well as offering off-the-shelf success to would-be artists.

Fans of the RealThings series will need no introduction to the thorough presentation of each subject; Humans stays very much in the mould, coming on two disks packed with both educational and artistic potential, together with the thorough manual which has become something of a trademark.

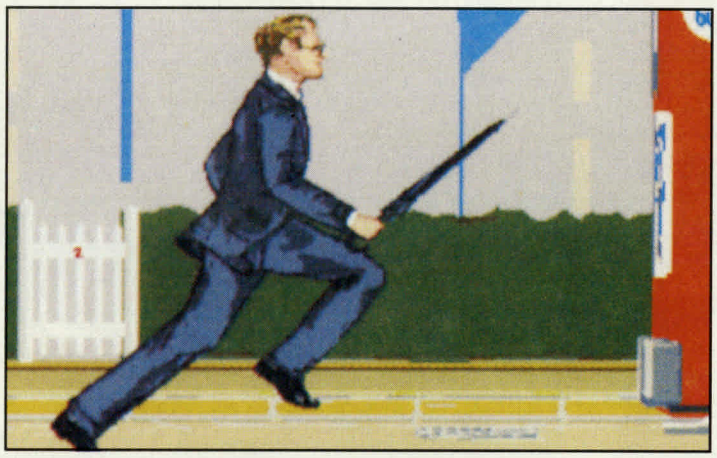
RealThings are meant for use within programs which can display the ANIM standard file, which will primarily be Deluxe Paint III, but which also includes a number of others - for instance CanDo, AniMagic or Deluxe Video.

As I mentioned, human movement is very familiar to all of us - but successfully translating that fluidity onto a computer display is far from easy. So, of necessity, the animations in Humans are quite limited - though not limiting.

The drawings are more accessible for further development than perhaps the other two RealThings subjects; they are open, bare animations waiting for you to clothe them - in more ways than one.

This is not to say that any of the nude subjects are indelicate - the female form is functional and well-observed with little to offend, and the male nude cautiously wears a strategic posing pouch.

This mini-life class on disk also features clothed people and a number of accessories, though due to space limitation, no scenery - which in any case can be culled from either of the company's two earlier releases. There is also a whole head animation, of questionable value when space is so tight.



You can create quality animations like this!

"Turning women can become dancers over a video title, and DPaintIII's outstanding anim manipulation will have men and women coming at you from all sides"

Among the useful inclusions on the disks are items of clothing - which reminded me of those dress-the-dolly books which used to keep youngsters happy with for hours when I was small. The clothing is drawn ready to fit onto the human shapes, and provides a good exercise in learning the technique so you can customise the figures in any way you wish.

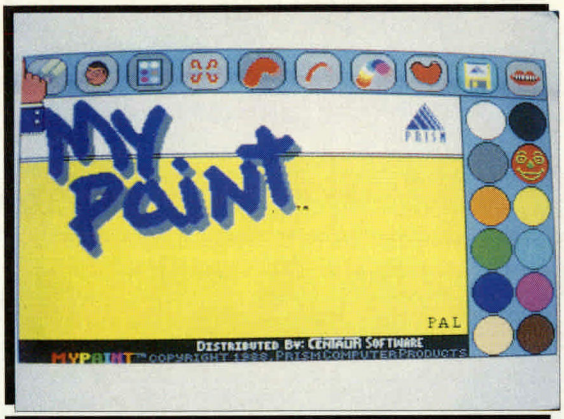
The range of movements of the humans is pretty standard - running, walking and turning, but there is so much finesse in the variety of anim brushes that the scope is far wider than you might think at first glance. Turning women can become dancers over a video title, and DPaintIII's outstanding anim manipulation will have men and women coming at you from all sides - if you like that sort of thing!

CONCLUSION

Off the shelf animations are a mixed blessing, but in the case of RealThings humans, even the bad anims are good! How else could you hope to refine the movement of humans in such an accessible manner - unless you were a highly gifted artist with plenty of time. The range of movement, and the appearance of the subjects is slightly more restrictive than I had hoped, but I can't argue with the effort which has been crammed into two disks. How you use the animations is up to your imagination - anyone with experience of the previous RealThings releases will need no encouragement to experiment. They lend themselves to innovation, and really need no justification other than they can increase your enjoyment of animation in general and DeluxePaintIII in particular.

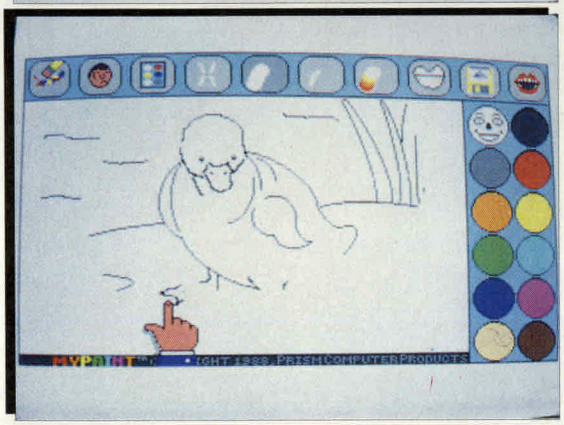
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Heard it on the G·R·A·P·E·V·I·N·E

We've all seen and played games based on popular films, so why shouldn't it work the other way around? Sure, a film based on a character famous among a community of a few thousand computer users doesn't sound like a recipe for instant success. However, thanks mainly to Nintendo's astonishingly high sales in the US, Mario, the Italian builder who first appeared in Donkey Kong, has got in on the merchandising scene, with his own breakfast cereal, shower gel, flame-thrower and all the rest.

The next step, it says here in the Merchandising Racket Handbook, is to produce a film. Nintendo must have the same book (maybe they wrote it), as a film is indeed in the pipeline. The starring role has been perfectly cast. Danny Devito of Taxi and Twins is to play Mario. The cameras should be rolling as you read this, with a release planned for summer '92.

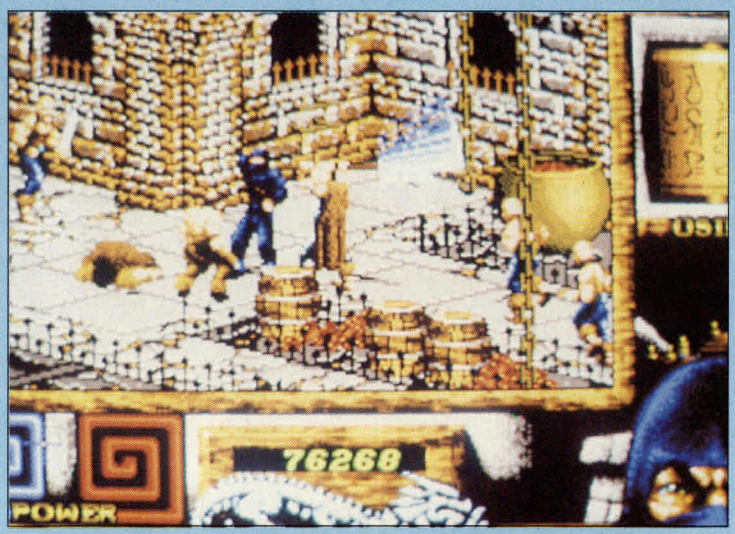
It doesn't stop there either. Double Dragon, one of the most internationally successful coin-ops is also to made into a film. An over-the-top Bruce Lee-style flick would seem to be the most likely format, along with a bit of humour I should think.

Not only that, but that randy spiv Leisure Suit Larry is due to hit the cinema screen in the near future. What next, a big-screen version of Tetris? Maybe not...

It's been a good month for sequels, as you might have noticed. System 3, who recently released Ninja Remix, the follow-up to The Last Ninja II, are about to unleash the next in the series, simply titled Last Ninja III. Ninja III promises to be the first of a new generation of Ninja games, with "real-life" animation of the characters, "incredibly detailed" backgrounds, and five levels of mind-bending arcade adventuring.



We've not seen much from US Gold recently, but things are about to change. From Lucasfilm, we're promised Nightshift, an original arcade puzzle game. It centres around a machine called The Beast (something like "Bertha" for those of you in tune with children's TV), which makes dolls of famous Lucas film characters from recycled rubbish. You've been taken on to operate the machine through the night-shift, but it turns out to be quite a handful. As various parts of the machine break down, you have to solve puzzles to fix them, in order to keep the toy Darth Vaders rolling off the production line. Fail to meet your quota and you'll be fired on the spot. Sounds like fun. Keep it here for the review in a future issue.



Ever raced around the empty streets of Monaco on a Saturday morning? I'd recommend it, but until you get the chance to do it for real, how about having a go at US Gold's conversion of the Sega coin-op Super Monaco GP? In typical Sega style, the coin-op was a 3D extravaganza, recreating the Monaco street circuit pretty convincingly, even to the point of flanking the roads with massive casinos, hotels and cliffs. The Amiga version is obviously going to be somewhat less adventurous in the graphics stakes, but shouldn't have too much trouble recreating the pacey gameplay.

Final Lap 2, Namco's sequel to its extremely playable two-player Formula One race game, has just hit the arcades. Unfortunately, Final Lap never made it to the Amiga, but now the sequel's here, there's a second chance. It's remained a favourite in the arcades for years, so surely someone can snap-up the conversion rights this time round? You can bet your last packet of pork scratchings that whoever does will make a tidy packet from it.

Other titles announced for future release include Core Design's Switchblade 2, Gods, the first game to appear from the Bitmaps on their new Renegade label, a rather uninviting tiger-shooting game from Mirrorsoft called Champion of the Raj, Back to the Future III also from Mirrorsoft, and best of all, Enigma Variations' incarnation of Enid Blyton's The Famous Five! Prepare yourself for some absolutely whizzo adventures in the near future.

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MIG-29 F

DO



LEFT: *There is a training scenario and five missions, the fifth is only accessible to pilots who have achieved over 500 points in previous missions.*

RIGHT: *Training Scenario target 1: this large building has an inverted V which guides you to the target. However, I found it harder to use the guides because it involved lining-up, whereas it is quite feasible to attack from any angle. In any instance, a kill's a kill.*



There's nothing more exciting than twisting and turning your jet fighter around the skies in a dogfight. However, these days you just don't get the chance to do exactly what you want with your new £30 state-of-the-art jet fighter. That's because in their quest to give you the "real thing" software companies reproduce the characteristics of the simulated plane to great precision. It is, therefore, the limitations of the fighters, and more precisely, the fly-by-wire system they incorporate, that filter into their respective simulations. The technology which offers pilots a reduction in workload, and automatic supervision, also serves to hinder their operation in a dogfight - the most exciting and deadly fighter scenario.

Mig-29 is an exception as it is not a fly-by-wire jet, and it is regarded by most to be the best fighter in the world. The limitations of the fly-by-wire technology are diminished, and so too is the relative safety. It is easy to black-out while performing a high gravitational G-turn, or equally as deadly to break the fighter's frame. However, it becomes feasible to perform tighter turns and higher climb rates.

In this respect the simulation seems to be accurate and the Mig does seem to perform these extra manouvrable aerobatics. During the dogfights the plane seems to hold well when performing the high G-turns needed to dodge incoming missiles and to get behind the opponent's fighter. Once you're out there dogfighting you'll soon recognise the difference between this, and other simulators.

The opponents don't just hang around or fly away they seem to be interested in the fight and this makes Mig-29 one of the best combat flight sims around. When Mirrorsoft's Wings was released it was praised for its dogfights. With Mig-29 it now has a more modern competitor.

What Mig gains over its competitors in close combat however, it loses on its missions. While the missions have different objectives and offer some variety they don't provide enough to keep the game as comprehensive as most others, especially since mission disks have not been catered for at the design stage.



ABOVE: *Yellow Dragon: This Chinese fighter has been target-locked and once that the box surrounding it turns red the air-to-air missile's chances of "scoring a kill" are increased from 40% to 90%*

RIGHT: *Back to base for a safe landing. The Mig-29 is quite easy to stall but it is the only plane that I've managed to land on my first attempt.*



ULCRUM

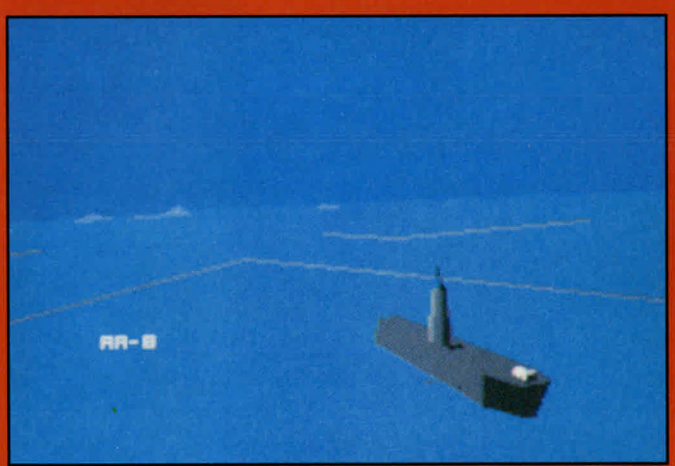
MARK



RIGHT: *Target two is easier to hit with an air-to-surface guided missile and it is not neccessary to get too close in!*

BELOW: *During this pass I managed to miss the sub's ID, even though I could look using the exterior views...just have to try again I suppose.*







There are five missions, not including the training scenario which allows you to practice flying and combat skills. Blue mission orders are to fly over a stranded enemy submarine in a recconiassance, take a note of its ID number, and to aviod the three Royal navy harriers which are protecting it. Yellow mission orders give you the chance to show the Chinese Air Force that their violation of Soviet airspace will not be tolerated, while White mission orders entails your single Mig-29 attacking an oil state. Targets are oil refineries and rigs. The Red Witch mission is the only one which involves night flying and the targets are ground trucks, and bases. Watch out though for the SAM missile launches which seem to be more frequent in this mission. The aptly named Desert Strike mission can only be volunteered for once you are a proficient flyer and have ammassed 500 points from previous sorties. This mission requires skills learned from the other missions and seems to be more complete and thus satisfying.

Missing from Mig-29 was a save/re-load game option which means that you have to restart the game from scratch everytime you play the game. The packaging is quite immpressive and includes an illustrated guide to the Soviet superfighter, a wall-chart containing a cross-sectioned Mig with a list of components, and the game supplied on a single disk.

The disk autoboots and configures itself depending on the user's machine capabilities. There are various screen modes; a PAL or NTSC 200 line 16 colour display for 0.5Mb owners; a PAL 200 or 256 line 16 or 32 colour display for 1Mb owners and a NTSC 200 line 16 or 32 colour display. The problem is that the options don't seem to be manually selected. On a 1Mb machine you are presented with a 32-colour 256 line display, when the 16-colour 200 line display may not be a pretty, but is a lot faster.

This is a flight sim for action men, and the combatants who likes flight sims. It is a very good model of the actual fighter and the development team have done their job well.

P.K.

Graphics: 89% Sound: 75% Playability: 85%

Absolute Value: 86% ***Price £34.95***

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TURRICAN 2

Rainbow Arts

If you like your zappers to pack a punch, you'll like Turrican 2. As its forerunner, "Two" has been programmed by one of the few games programmers who really knows how to use the machine, and won't settle for second best just to meet a deadline.

The storyline rambles on a bit, but it boils down to the standard "save the world from an evil dictator" plot. To set things straight, you have to get through a whopping twelve levels of alien landscapes, before frying the innards of The Machine, the evil one who masterminded the invasion.



Turrican is much as he was before, something like a cross between a Stormtrooper and Robocop. You face level one with a basic laser gun, which takes out the initial attackers without too much difficulty. These stumpy little droids can also be destroyed by jumping on their heads, a trick Turrican seems to have learnt from Nintendo's Mario. Just a short way into the first level, the attack is stepped up. Fortunately you can upgrade your gun to keep pace with the enemies. Tokens floating overhead can be shot to reveal various power-ups. Collection of these can grant you a five-way laser, bounce bombs, fireballs, extra lives, energy and super-laser upgrades. Your Ghostbusters-style super-laser is now accompanied by detailed animation as your wave your fiery shaft at anything in range.

Most of the levels are platform-based, scrolling in all directions. Graduated sunsets scroll in parallax during the over-ground stages. Depending on the theme of the level, you could find yourself battling against droves of creepy spiders, fighting your way through a storm, exploring gothic castles or taking a jog through the set from Alien. Of course, before you get to the next level, there's the level guardian to deal with, most of which are pretty meaty. Added variety comes from the more traditional shoot 'em up levels, during which you pilot a spaceship, R-Type style through a horizontally scrolling corridor, then through a couple of narrow mazes.

"Depending on the theme of the level, you could find yourself battling against droves of creepy spiders, fighting your way through a storm, exploring gothic castles or taking a jog through the set from Alien"



Turrican 2 isn't too far removed from the first game, but that's no bad thing. Both graphics and sound are excellent. Except for those occasions when things get extremely busy, it all moves along at a smooth 50 frames per second. If demo-style synth tunes are your thing, you'll be pleased to hear there are twenty of them to be found during the game. Fortunately these can be switched off in preference to the quality sound effects if you like.

It's not often we see a game as well-produced as this. Shoot 'em ups are sometimes said to give poor value for money, but with its twelve levels, Turrican 2 makes sure you get a pretty big game for your folding stuff. If it's a zapper you want, you'll have a job finding a better one than this.

T.H.

Graphics: 91% Sound: 82% Playability: 90%

Absolute Value: 90% Price £24.95

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Robocop 2

Ocean

Robocop 2 is tailor-made for a computer game conversion. All that hi-tech cops and robbers action has the makings of a brilliant arcade game. As Ocean were so successful with Robo 1, it's not surprising they've ended up programming the small-screen sequel.

A short way into the future, Detroit has landed on hard times. A new designer drug has surfaced, more addictive and harmful than any yet devised. It's called nuke, it's catching on fast, and with the police on strike, there's no-one to stop it. Never much of a union man, Metal Murphy (or Robocop as he's otherwise known), decides to tackle the problem alone. Cain is the king-pin in the Capone-inspired racket. Arrest him and your troubles will be over; or will they?

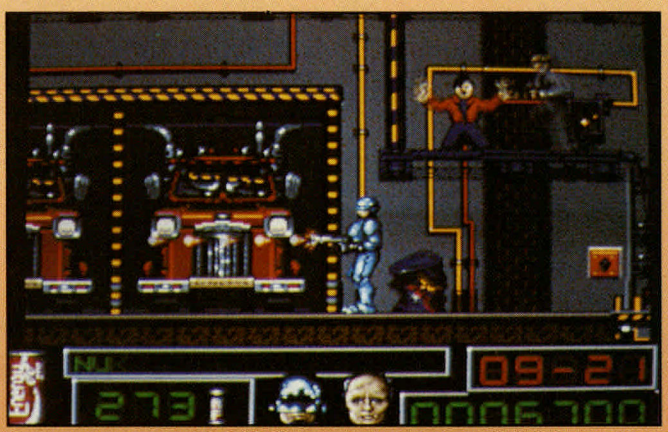
"Rather than pebble-dashing the walls with fleshy bits, your victims tend to explode in little mushroom clouds"

Sporting substantially larger graphics than the first game, Robocop 2 follows a similar route in the gameplay department. Multi-directionally scrolling levels make up the core of the game. Level one sees you raiding an old warehouse, packed to the rafters with nuke and gangsters. The reception is unfriendly to say the least, with our tin machine greeted by machine guns, mortars and rocket launchers. Get your autofire joystick out for this one, you'll need all the help you can get.

An endless number of mobsters appear from off-screen, each intent on dealing the final blow. Fortunately your armour can withstand quite a pounding, and your limitless ammo wipes out the enemy without too much mess. In fact, rather than pebble-dashing the walls with fleshy bits, your victims tend to explode in little mushroom clouds. Innocent hostages are placed around the levels, and can be "collected" for a slight energy boost. Killing them has the opposite effect. The sprawling first level takes you on a tour of the warehouse, ending up at the nuke-production room, which obligingly explodes as you make an entrance.

Next there's a little relief from the life-threatening platform levels. First is a simple but entertaining puzzle game, in which you have to restore your memory by manipulating chips on a circuit board. A brief, but improved firing-range





follows, giving you the opportunity to top up your energy supplies.

Back to the slaughter, the hunt for Cain continues in his hideout. After his arrest, Cain's brain and spinal chord are used as a basis for the police force's new project: Robocop 2. Encased in a robotic body, desperately craving a shot of nuke, Cain runs riot in the city centre. Polish him off once and for all, and you've managed to complete one very difficult shoot 'em up.

I was a little disappointed to see the bike/van chase sequence from the film hasn't been included, and the scene where Robocop gets chopped to pieces by the gangsters would have made an interesting intermission. However, by keeping a common format throughout the bulk of the game, programmers Special FX have got it to hang together more neatly than other multi-level film tie-ins.

Still something of a rarity, smooth scrolling keeps the shoot 'em up sections moving along at a hectic pace. Robocop himself is nicely drawn, his actions accompanied by the sounds of servos and hydraulics. The rest of the graphics

"Still something of a rarity, smooth scrolling keeps the shoot 'em up sections moving along at a hectic pace"

are somewhat less impressive, with strange choices of colour scheme in places. Even so, there's no shortage of satisfying explosions and beefy weapons, two vital ingredients for a decent blaster.

The gameplay does have its flaws. Once an enemy has taken a shot at you, there's no way of dodging it. Although you can duck down, it's no defence. Because of this, it can feel like driving a tank through a minefield. A bit more scope for skill, rather than just practice, would have gone down well. Patience is essential if you're to get anywhere. If you fancy a toughie, give it a shot.

T.H.

Graphics: 82% Sound: 75% Playability: 78%

Absolute Value: 77% ***Price £24.95***

LEMM

Right, left, pass to the right, shoot, no, shoot! Rotate, again, left, drop, left, stop the third, dig, build, climb. Oh, oh, it's too much for me. A couple of years ago Kick Off was released, I played and played it so much that at nights, before I nodded off, my head was full of "how to score the perfect goal". A few months ago I was re-introduced to Tetris, via the Nintendo Gameboy, again I couldn't sleep - my brain full of rotating and twisting blocks. Now it's the Lemmings turn to fill my mind with nonsense when my grey matter is least expecting it.

If you have ever seen Lemmings, the game, on display at a local store, or at a show, as I had, you may be forgiven for walking by uttering the words "what's that crap". Well, now I've played it I know it's called fun. Yep, the aim of the game is to have fun, and while doing so leading your Walkers, the furry friends, across the different obstacles and into the end-of-level archway.

The Lemmings fall through the trap door at the start of each level at a linear release rate, e.g. 1 per 2 seconds, and start to walk towards the archway. These Lemmings are called Walkers because that's all they do. They walk into walls and walk away in the opposite direction, they walk off the edge of a cliff onto the bottom surface - usually to instantaneous death. They walk everywhere and anywhere they can and if left will walk into certain destruction.

It is your duty, as a fully paid up member of the "Save a Lemming Campaign" - you are going to buy the game, aren't you? - to help these poor brainless creatures. Along the bottom of the screen are various skills; Climber (scales vertical columns), Floater (float down to lower ground), Exploder (blow up blockers), Blocker (stem flow of Lemmings), Builder (builds bridges), Digger (digs vertically down), Miner (digs diagonally down), and Bashers (digs horizontally). You can allocate a skill to a Walker as you deep neccessary. The Walker will then be known as one of the titles listed above i.e. Builder, Stopper, etc., and will carry out the function required.

There are four game categories from Fun to Mayhem, each of which consists of 30 very different levels and depending on which game category and level you are playing you will be allocated a variable number of each skill to distribute to achieve your goal, which could be anything from saving 10% to 100% of the Lemmings.

A two player mode also allows you to play against a friend concurrently with the screen split vertically and each having half of the screen as a visable playing area. There are 20 levels on 2-player mode and the game continues until neither player saves a solitary Lemming.

When you complete a level you are given an access code to the next level which allows you to restart the game on the last level which you have not completed, or on any level you choose come to that!

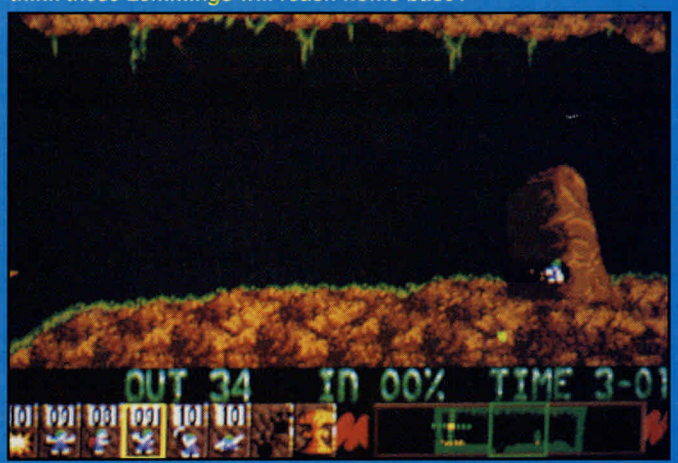
And that, as the saying goes, is that! A simple, easy to learn, fun, exciting, and challenging game, the likes of which has never been seen before on a computer screen - that is it's original.

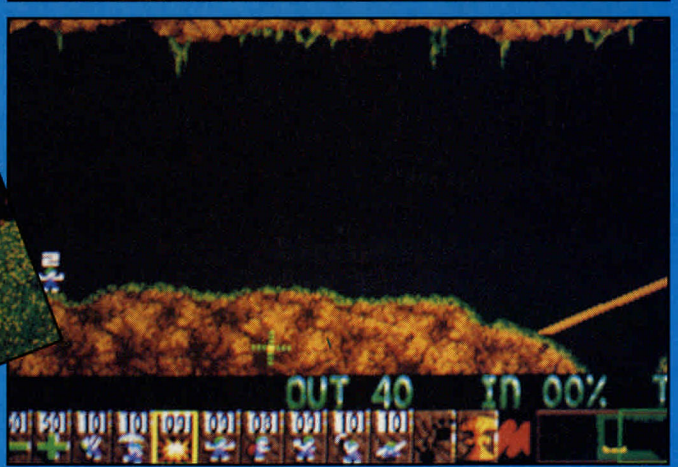
As I had previously mentioned, when I first saw Lemmings I was uninterested, but after having a go I was hooked, still am, and still will be for a good time yet I imagine. The variety offered by the game categories make it FUN for kids, TRICKY



As always the Psygnosis intro features excellent animation and gives a close up of what a Lemming actually looks like.

BELOW: ***This little Lemming has built the bridge and is now bashing its way through this rock while the others are being held by the stopper below*** **(BOTTOM)** ***seconds on the clock, do you think these Lemmings will reach home base?***





LINGS

for schoolies, TAXING for students, and MAYHEM for intellectuals. I'm quite sure each will find, and improve upon, their own level and I've probably got the categories and groups all mixed up.

The graphics are small, but well-drawn and animated and the soundtrack is cute, rythmical, and darn right annoying after a few hours, luckily though it alternates between several samples with levels. Supplied on two disks, which use 2nd drives and extra memory to the full you can't, and won't, go wrong in joining the "Save a Lemming Campaign".

On a final note I am going to tackle the "You can't give a game 100% brigade" by stating that in my opinion the game ranks amongst the likes of Kick Off and Tetris, now you can't get a better accolade than that, can you?

P.K.

"A simple, easy to learn, fun, exciting, and challenging game, the likes of which has never been seen before on a computer screen"

(100%? Has P.K. finally lost his marbles? Ed)



PSYGNOSIS
PSYGNOSIS
PSYGNOSIS
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ABOVE: *This is the main menu which can be accessed throughout the game.*

ABOVE RIGHT: *On two player mode the screen is split with player one (me) controlling the left-side screen and player 2 controllling the right-side screen, but as you may notice no-one would play with me (sob, sob..)*

RIGHT: *Another day, another Lemming to save. With only 37 seconds on the clock, do you think these Lemmings will reach home base?*

Graphics: 100% Sound: 100% Playability: 100%

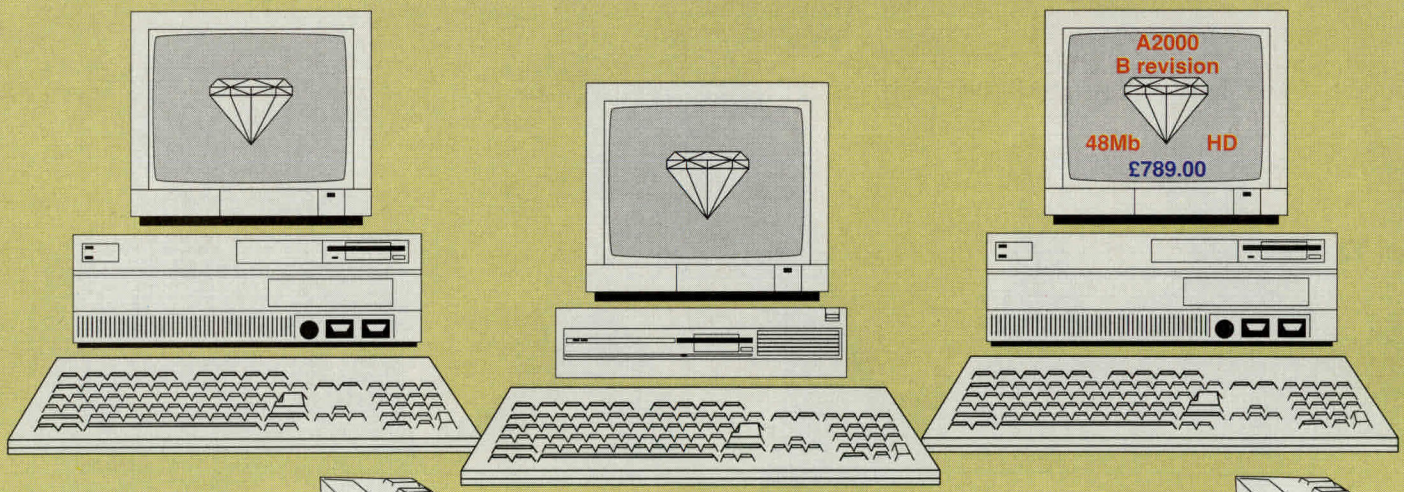
Absolute Value: 100%

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Star

Chase HQ 2

OCEAN



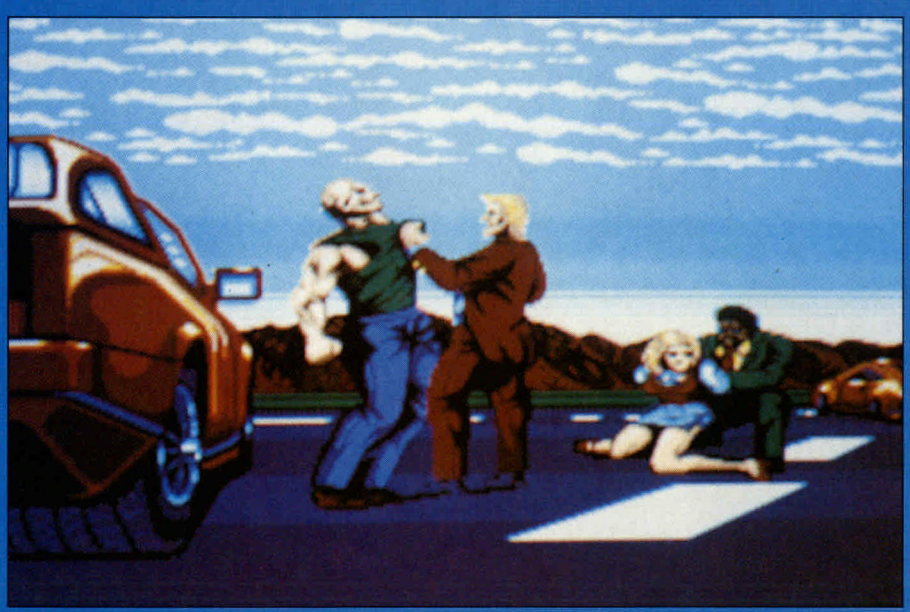
When the accepted format of 3D race coin-ops was broken, or at least fractured, by Chase HQ, the idea of ramming a criminal's car off the road was appealing, and continued to be for some time. A sequel was inevitable, but when it came, it turned out to be little different from the first game, with a disappointing lack of new twists. Still, the market being what it is, a sequel was obviously a good idea for all involved, including Ocean.

As before, the game opens with a briefing from Nancy at Chase HQ. Some sampled speech, which unfortunately gets lost in the accompanying background music, details you on your mission. The object is no different to the that of the first game. You're given a target car, and ordered to stop it before the time limit expires.

Once on the road, you first have to catch up with the vehicle, currently speeding out of town. Depending which level you're on, your drive will take you through open country, dual carriageways, tunnels, across suspension bridges and into the desert. As the criminal comes into view, he's picked out of the traffic by a big flashing arrow. With him in your sights, you can start smashing up his car by ramming into the back of him.

Here comes one of the few new features. Pressing fire persuades your partner to pop up through the sunroof and start shooting the baddie. Before long you'll see a helicopter overhead, who drops a rocket launcher which can be used in obvious ways. With the criminal's car engulfed in flames, you can pull over and arrest him, before moving onto the next villain.

Development team Ice were chosen to handle the 16-bit conversions. This was a strange choice, as just over a year ago they converted Turbo Outrun for US Gold without much success. As with Turbo Outrun, Chase HQ 2 just doesn't have a high enough frame-rate to put across a good illusion of movement. It may say you're doing 200Mph on the speedo, but if all you see is a jerky succession of sprites flickering around the screen, the impression of speed isn't so much spoiled, as non-existent.



Ice do create some nice graphics. The intro screens and interludes have a professional coin-op look about them. The in-game graphics are also neatly drawn. The handling of the car, on the other hand, is rather sloppy. At low speeds, it veers all over the place, and once you put your foot down, holding a corner is very awkward.

It's not a complete travesty, and still has the basic Chase HQ gameplay to keep its head above water. Compared to the Amiga version of Chase HQ, it comes out a clear loser. With plenty of superior race games on the market, you'd do better to look elsewhere.

T.H.

Graphics: 67%
Sound: 60% Playability: 61%
Absolute Value: 59%
Price: £24.95

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MES

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Hard Drivin' 2

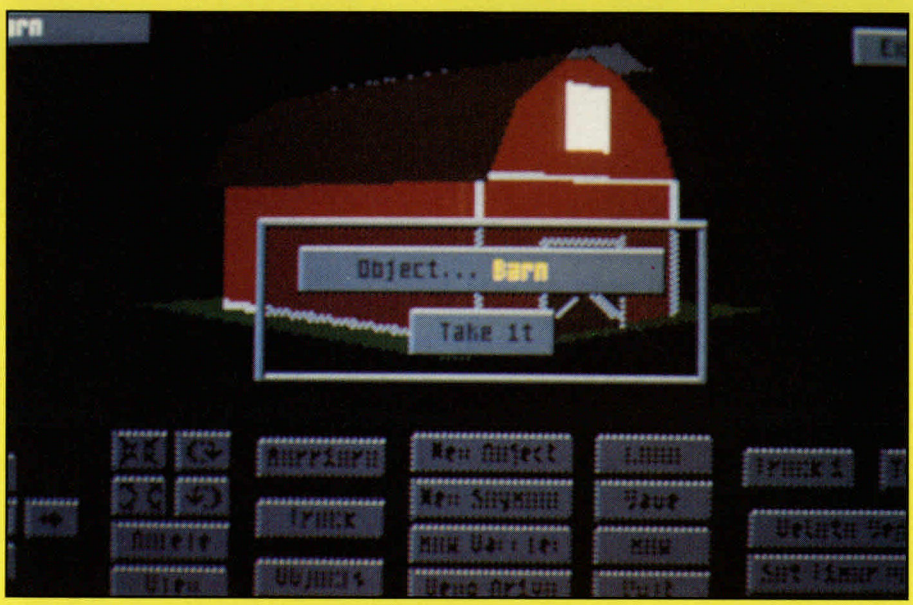
Domark

Remember we told you in the December issue of AUI about Race Drivin', Atari's sequel to Hard Drivin'? Well, this isn't it. Instead, it's Domark's sequel to Hard Drivin'.
Although the two sequels are both based around the stunt car driving of the original game, Domark's sticks closest to the style of Hard Drivin'.
Rather than a complete new game, Hard Drivin' 2 is more of a revision of the original Amiga conversion. What you get, is the old game, plus four new tracks, and a track designer to allow you to create your own. Some of the bugs have been fixed, so now you don't often see cars disappearing under bridges when they should be on top of them.



"They're all "remixes" of the old track, with the loop, banked curve, bridge and jumps placed in a different order"

With the game loaded, you get to choose your track from a list of four. None of these is radically different to that of the original game, and you'll find no new features. They're all "remixes" of the old track, with the loop, banked curve, bridge and jumps placed in a different order. The trackside scenery too, will be familiar to Hard Drivers, consisting of houses, barns, shops and roadsigns. The track editor gives you those same objects with which to build your own circuits. In order to give you an accurate image of your track, it uses solid 3D graphics. Unfortunately this slows it down to a very awkward rate. The mouse moves around as if it weighs a ton, and laying down the track is an extremely slow process. A designer more along the lines of that seen in Racing Destruction Set would have been an enormous improvement, allowing quick and easy construction and experimentation. As it is, you'll need the patience of a saint to build your own track. Even then, it will probably seem much like the others.



The gameplay itself is still quite slow. Compared to Indy 500, it runs at a snail's pace. The controls could be more responsive, but it does manage to retain a fair bit of the Hard Drivin' feel. The cheat still works by the way; put it into neutral and you can cruise around at top speed without skidding.

I expected to see a few new track features. Without these, or in fact any new features of any significance other than the designer, Hard Drivin 2 has little to offer fans of the original. Anyone without Hard Drivin' should get their money's worth (although the original game available in a couple of compilations looks more inviting), but others are liable to be disappointed. More suited to a "Data Disk" format I feel.

T.H.

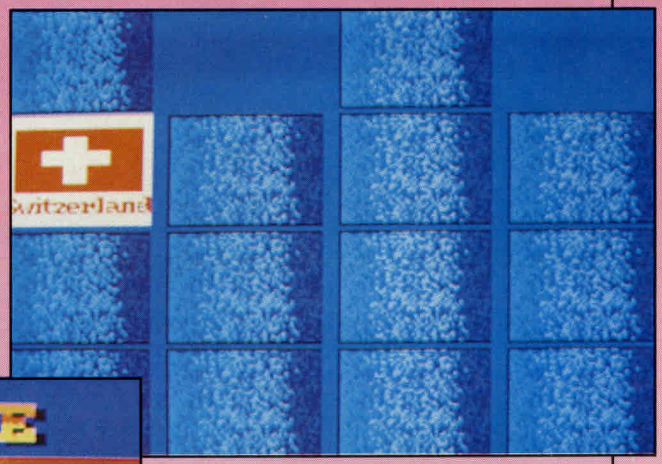
Graphics: 70% Sound: 50% Playability: 79%

Absolute Value: 75% Price £24.95

MATCH PAIRS

Electronic Arts

Martin Witton gets revenge on the children...including assistant tester 10 year old Victoria



One of the first games I played with each of my children at a very early age was 'Pairs'. Starting with four cards, we soon moved on to a full pack and it was one of those games which ,like Dominos, Scrabble and Snap, children never seem to tire of.

Various forms of the game were available and it never ceased to amaze me how quickly the children learnt to beat me - they always seemed to be able to remember where the other half of the pair was while I was left helplessly trying to conjure up a picture of where the card's partner might be!



Finding a computer program for the Amiga with its vivid graphics that was called 'Match Pairs' delighted the children. They have quickly become all so adept at using the Amiga as many "small people" are, and playing something familiar dispensed with any of the frustration usually associated with a new game which requires patience while instructions are followed and rules learned.

Match Pairs allows the parent who is frustrated by his more competent offspring some respite, as the child can play against the computer at one of the three levels of difficulty. These are represented by the child pictured with the computer and numbered 3,4 and 5. At the highest level of difficulty (5) the computer NEVER FORGETS a card once it is turned over!

There are seven categories of choice including shapes, flags of countries, dinosaurs and planets. 'Dogs, cats and horses' are popular with younger children, while older children prefer 'Terms of the universe' and 'Phases of the moon'. Parents may steer their offspring towards choosing 'Numbers and fractions' to get "full educational value".(But they probably won't stay there!)

The options screen allows you to choose the size of the 'card' - younger children may wish to begin with the largest card. A numbered square with a picture of a child showsthe level of difficulty; using the mouse to click on the picture of a British flag lets you select a choice of language from English, French, Italian and German. All the words in the game will be spoken in that language. So it could even help them to learn to speak those languages.

Victoria, aged 10, went straight to the most difficult level with the maximum number of cards. She chose 'Sea Life'. Using the left mouse button she 'turned over' one card, then decided which one might be a match by clicking the mouse over another card. If the cards were the same she got another go. Her turn continued until she failed to make a match. She enjoyed the challenge but thought there should be a time limit included to make the game harder. At the end of the round she scored 14 pairs to the computer's 6.

The options at the end of a round are: to replay the previous game with the same card layout, to go back to the options screen for a new game or to exit the game, all depicted by traffic lights - green , yellow and red respectively.

Victoria decided to try another game with a new category, but thought it took too long to reset and went off to get a drink. Meanwhile her 6 year old brother saw his chance and with no difficulty and apparently little effort, notched up a score of 18 against the computer's 2 at the intermediate level.

The game was devised by Dr. Penny Graham while taking time off from her academic career to care for her small children, and was written with a substantial amount of input and feedback from her own children, their playmates and babysitters.

The game should appeal to all ages of children, although it would probably be used more by preschool children whose development at that period is very much geared to matching and sorting. As with most games, Match Pairs scores well on the novelty value invoking immediate interest and so capturing their attention. However, the real test should be made in six months or a year to find out how many times it has been out of the box. At present it's certainly popular as an after school alternative to 'Neighbours'!

M.W.

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GAZZA 2

Empire

They completely messed up the first Gazza game, but with Gazza 2, Empire gave themselves a second chance to get it right. There are few things I like more than a good football game, so I was hoping this would turn out OK.

Once the exception, the overhead view is now the norm for computer footy games. Gazza 2 stays in line with the trend, opting for a pitch laid out from left to right, as opposed to the top to bottom lay out of Kick Off for example. Attempting to cater for both the strategist and the joystick jockey, the game includes both



"You get the choice of chips or low drives, along with the opportunity to swerve the ball"

managerial and on-pitch sections. The managerial side can be ignored if you just want a quick kick-about.

Icons are used for all the managerial decisions. These are laid in a strip along the bottom of the screen, marked with little pictures to indicate their functions. Either a clearer set of icons, or just a standard menu system would have helped this side of the game. Some proper instructions would have also gone down well. So the manager section is a bit of a let down, but surely the on-pitch action can save it all?

As usual, you control the player with the ball, or the nearest player if you're not in possession. Holding the button sends a power bar rising. Releasing the button kicks the ball. The type of kick depends on the direction of the joystick. You get the choice of chips or low drives, along with the opportunity to swerve the ball. Sliding tackles are a pale imitation of those seen in Kick Off, during which the player sprite actually stops flickering for a few seconds.



The scrolling window is contained in an NTSC screen, rather than the larger European PAL screen. The visible area of the pitch is so small that it's impossible to put together any decent moves, even with the help of the scanner. The scrolling is poor, and the movement of the ball is far from realistic, wobbling around the pitch with a mind of its own.

"A football game doesn't have to be a Kick Off beater to be worthwhile, but it does need to convey at least some of the excitement and competitive spirit of the real thing"

Even if the manager section had been any good, it would have been rendered useless by the matches themselves. The tactics editor is a good idea, even if it has been lifted from Player Manager, but with such hopeless attempts to simulate the on-pitch action, it all seems pretty pointless. A football game doesn't have to be a Kick Off beater to be worthwhile, but it does need to convey at least some of the excitement and competitive spirit of the real thing. Contrary to popular belief, games tied to a big name don't have to be a complete load of rubbish; Ocean have made an effort to back up their licences with decent games, and look where it's got them. But then who wants to be Europe's most successful software house anyway?

T.H.

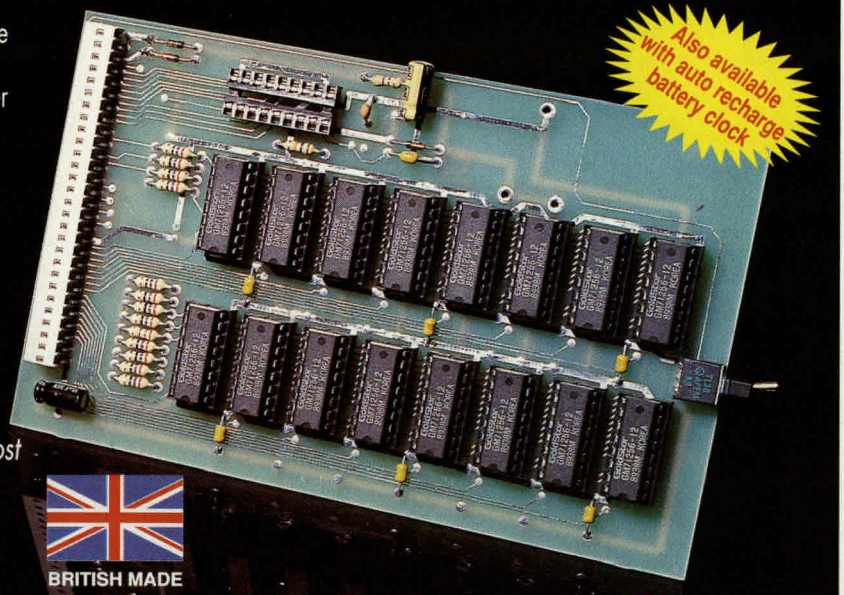
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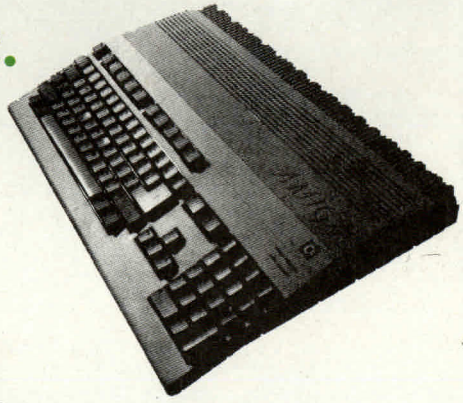
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ADVENTURE NOW!

Andy Moss celebrates the rise in popularity of strategy and adventure games

WELCOME BACK TO ANOTHER CHRONICLE OF ADVENTURE AND STRATEGY WHERE EVERYTHING YOU NEED TO KNOW IS CONTAINED RIGHT HERE. A GREAT DEAL OF THIS MONTH'S COLUMN IS DEDICATED TO A GAME THAT COMES ALONG ONLY ONCE IN A SWEEP OF A HEROE'S SWORD, A REAL HUMDINGER OF A GAME THAT HAS KEPT ME AT MY SCREEN FOR HOUR UPON HOUR. IT HAS BEEN A LONG TIME COMING, BUT 'BETRAYAL' IS FINALLY HERE AND WELL WORTH THE WAIT. IT IS RARE THAT ANDY MOSS GETS SO EXCITED ABOUT A PRODUCT, SO READ ALL ABOUT IT.

BUT FIRST, THE NEWS.....

ADVENTURE NEWSDESK

RAINBIRD FUEL THE FLAMES

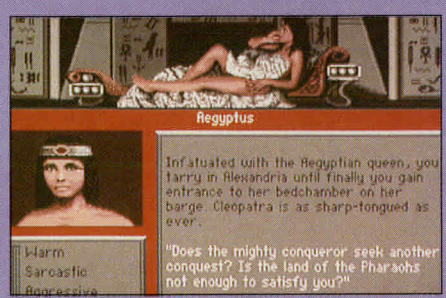
The much touted sequel to MIDWINTER is almost finished and game designer megastar Mike Singleton promises that it will be leagues ahead of its illustrious predecessor. 'FLAMES OF FREEDOM' continues the story of Midwinter Isle some sixty years on in time, and now finds itself at the mercy of the Earth's changing climate. Reclaimed by the seas which had created her, Midwinter has been abandoned by her people for a new island standing tall above the rising waters. Named Agora, this island, one of 42 in the region has welcomed the Midwinter survivors into the Atlantic Federation, a force committed to peace and prosperity for all. But the evil Saharan empire is intent on conflict with the Federation and has enslaved all the other island communities. You, as the best Federation Agent, must carry out missions of rescue on each of the islands, which in turn have different political, cultural and administrative policies, so you will be required to use many different characteristics. You will be able to choose your own looks, sex, psychology and physical characteristics, and interact with over 4000 characters. There are 24 different modes of transport to take you across over 250,000 (yes a quarter of a million!) square miles of accurately mapped 3D sourced fractalterrain. As if that is not enough, there are thousands of buildings to explore and over a dozen weapons to use. Sounds as easy as spreading butter.

SIERRA ARE HERE

Sierra have at last established their own office in England. The address is Sierra on Line, Unit 2, Technology Centre, Station Road, Theale, Reading, Berkshire RG7 4AA. Telephone Customer Support (for help with games) 0734 303171.

ELECTRONIC ARTS ARE BACK

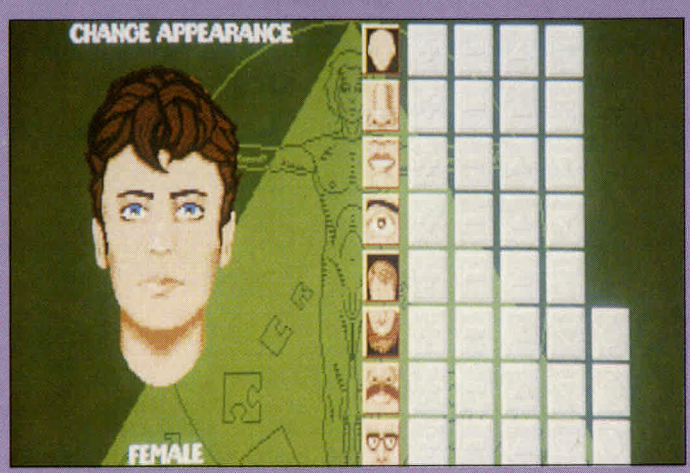
After a period of inactivity on the adventure front EA bunce back with some real goodies. CENTURION: DEFENDER OF ROME is billed as a cinematic masterpiece. Always the masters of the understatement, EA have commissioned Kellyn Beck, who designed Cinemaware's first hit 'Defender of the Crown' to produce an evem more stunning game for them. Set in imperial Rome, you play the role of a young officer in control of the Roman Legions, with a remit to defend the city against it's many enemies. Using diplomacy, and strategic military manouevers you must defend Rome and bring the provinces under Roman rule. If successful , you can progress to building ships and raising legions to protect the lands at the boundaries of the empire.



Centurion: Defender of Rome



Flames of Freedom

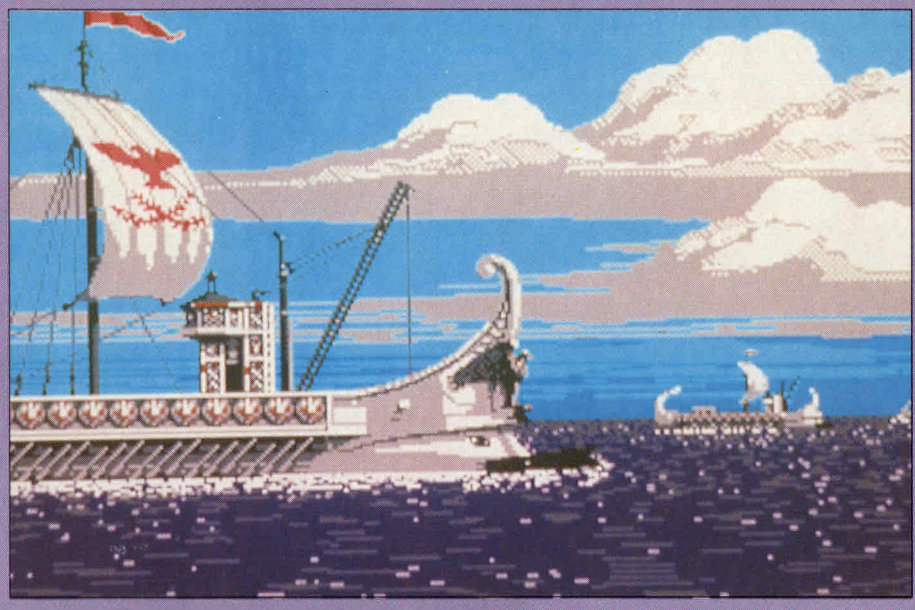


Flames of Freedom.

On top of all this hard work, you can take time off to compete in the Roman Games and maybe win the hand of Cleo herself. It promises a lot but does it deliver? We will see.

Also out of the EA stable comes the third Amiga version of my favourite adventure series of all time BARDS TALE III. This time around, Skara Brae is in ruins, destroyed after Mangars demise by his master, The Mad Dog Tarjan. Your challenge is to assemble a party to travel through the World to seek out Tarjan for revenge, and free Skara Brae from its bond of ruin. There is an auto mapping routine for the 84 dungeon levels, through seven different dimensions, battling against 500 monsters. Make no mistake, it is the best one yet.

Finally, for puzzle lovers, there is LEXI CROSS a highly addictive word puzzle game. Memory, srategic and puzzle solving skills are needed here in this fast paced futuristic game show that is sweeping the universe. You spin for letters, buy vowels, uncover words and ask for clues to over 600 puzzles for either solo or face to face play. More details soon.



Centurion: Defender of Rome

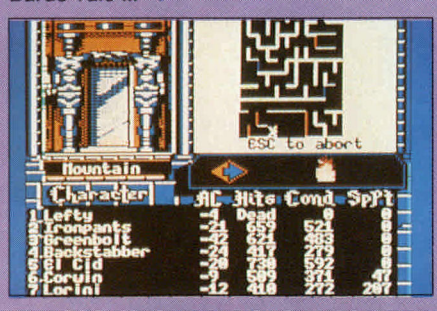
Bards Tale IIII



EX-INFOCOM GIANT INDULGES IN SPELLCASTING

Remember Steve Meretzky? Well you should do, he wrote PLANETFALL, HITCHHIKERS GUIDE AND LEATHER GODDESSES for Infocom. Steve is back working for a new company called Legend Entertainment (through Microprose in England) and has developed a game entitled SPELLCASTING 101. You play the part of a would-be sorceror, who must escape from home and the clutches of your evil stepfather in order to attend Sorceror University. Once there, you engage in the numerous activities that any college student would get involved in, raucous fraternity parties, excursions, challenging sorcery classes and testing in the simulation lab. All this preparation is needed to accomplish the games mission, which is a secret, but what I can tell you is that a great sense of humour is needed along with an insatiable curiosity. There is a second Legend release planned called TIME QUEST, due out later in the year.

Bards Tale III



Talking about Infocom, Virgin have just snapped up some more Infocom back numbers adding to the five they have already , to retail at a budget price of #9.99. Go get 'em.

CRY FOR HELP DESK

CONQUESTS OF CAMELOT

TRAPPED ON GLASTONBURY TOR?

When you killed the Mad Monk the Old ones became angry and made you their servant in his place forever. However, if you find a way to appease the Old Ones they will allow you to leave. On the Tor there is an altar, find it, and ask the Old Ones about SILVER and the MOTHER MOON. Put five silver coins on the altar and they will release you from servitude and give you a key, which is the first step to getting out. After that, use the key to unlock the well, reach into it, and there you will find the cause of the Circular Entrapment, because now you are free to leave.

KEEP DYING IN THE DESERT NEAR GAZA?

This is a very tricky sequence, helped no less by the very slow screen updating, so much patience is needed. The desert is very difficult to navigate, but you can use the lodestone to point you north. On leaving Al Sirat's house, say 'NO' to Jabir, then go south into the desert. Go East, South, East and you will come to a pool of water. DO NOT DRINK THE WATER UNDER ANY CIRCUMSTANCES!!! Draw your sword to scare off Jabir (you get to kill him later on) then go East past the skeleton. You will now come to a Wadi, go north and enter the pit building by the

stairs only, do not jump! Drink the water, leave the pit, and go North for two screens. Here on the outskirts of Jerusalem, you will be attacked by Jabir, kill him with your sword and save the game there. On the next screen you will be at the gates of the City, but at the mercy of some nasty looking thugs. Do not attempt to fight, just pay up and go west around the outside wall.

FUTURE WARS

STUCK IN THE RUBBLE IN THE FUTURE?

Walk to the bottom right of the screen and examine rubble to get a blowtorch. Find the small white dot on some rubble in the centre of the screen and then 'examine rubble' to get some fuses, and 'operate rubble' to find manhole, 'operate manhole cover' to go down. Go East twice, and then 'use blowtorch on tap'. Go West, West, East, East, East, and then 'use blowtorch on creature'.

Then 'use lance on video camera' when you are in front of it.

A.M.

ADVENTURE REVIEWS

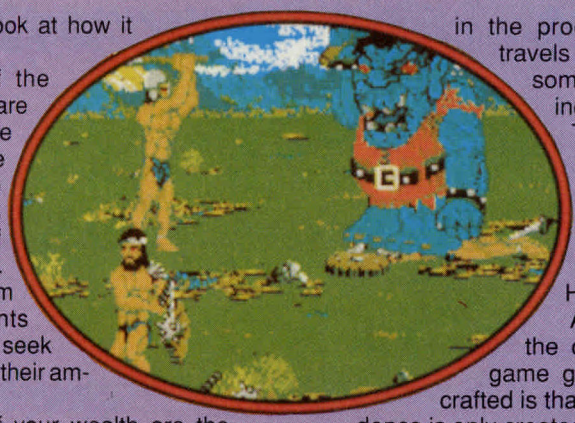
BETRAYAL

RAINBIRD

If you believe in fair play and the old adage that cheats never prosper, and that honesty is a virtue, then you will not get very far in BETRAYAL. This is a game where your opponents will betray you, not to mention each other, at the drop of a hat and they will cheat, lie, pillage, kill and assassinate anyone that they can get their hands on and end up blaming you if they are caught. Nothing is sacred, plotting, spying and deviousness are what counts in the military financial and political fields.

Your only chance is to be totally ruthless, even if it means painful sacrifice. At all costs you must grow unstoppably rich and militarily powerful so that you can bribe more places for your Courtiers than anyone else at the palaces of the King and Bishop. They are old and tired, and fast losing control, and only you as one of the four great warriors of your Kingdom have the potential to take over both places of power and become the supreme leader, the Lord High Protector.

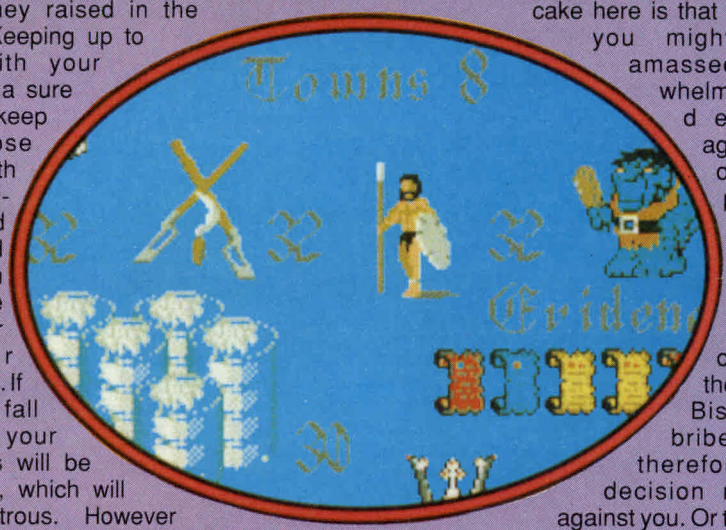
This then is the scenario behind BETRAYAL, an adventure that has gripped me and never let go. I suppose deep down there is something in me that panders to this type of approach, I mean the odd lie, a little cheat now and then when needed in real life, but BETRAYAL for me lets it all out in full nasty glory.



Let's take a look at how it works.

The lands of the West Marches are ruled over by the Church and the Crown. In the West Marches the currency of power is wealth. Every citizen from humble peasants up to Palaces seek money to further their ambitions.

The source of your wealth are the towns that are under your control and tyranny. They produce crops each year which can be harvested which of course in turn produces money. Now, in the royal and religious palaces, the King and Bishop both expect the Knights of the land to provide them with money levied from tax money raised in the towns. Keeping up to date with your taxes is a sure way to keep your nose clean with the leaders and hold places in the courts for your Courtiers. If you do fall behind, your Courtiers will be removed, which will be disastrous. However paying more than is necessary will allow you the chance to install more Courtiers, but remember, there is only space for 24 Courtiers in each Palace. If every player pays up and is a dutiful citizen, the chance to gain an outright majority is impossible, so you must find ways to create some spaces by getting opposing players Courtiers removed. This, of course, is not an easy task as the other three players (computer or human) are not just going to remove them if you ask! No sir, you must become 'politically skillful' and get them ousted by any means you can. Gettit?



Some of those means will entail assassination which costs, of course, cutting off income source by defeating enemy towns in battle and either taking them over as your own or ransacking them so no one else can take them for a year, and collecting evidence on your travels against the opposition and taking them to court for trial for heresy and treason. Collect enough evidence (this is done by riding your horse along roads and finding evidence scrolls along the way, or bribing other Courtiers, or spying on others etc.) and the accused will be found guilty and lose some Courtiers in the process. On your travels you can pick up some evidence that incriminates you. This is useful because it means no one else can obtain it, and you can destroy it later. Ha!

An example of the clever way this game game has been crafted is that a piece of evidence is only created when a player has committed an act of atrocity, such as fighting, tyranny (hauling his own townsfolk into the stocks) spying on or assassinating a Courtier.

The four players are coloured Red, Blue, Yellow and White and the Evidence scrolls reflect their colours. The icing on the cake here is that although you might have amassed overwhelming evidence against another player, he may have paid huge amounts of dosh to the King or Bishop in bribes and therefore their decision may go against you. Or they may call in a witness (another player) who will testify against you. Either way, you must resort to low level tactics at all times.

Graphically the game is superb, and the package carries a very well-written manual that explains all the intricancies of the plot. The fight routines are displayed with huge sprite figures that wield their weapons exceptionally well, and die beautifully.

One review cannot hope to present just how entertaining BETRAYAL is, just go out buy it and see for yourself.

A.M.

Graphics: 97%
Sound: 70%
Playability: 99%
Absolute Value: 98%
Value: £24.95

Thats it for this month, if yu have any comments on the column, write to:

Andy Moss,
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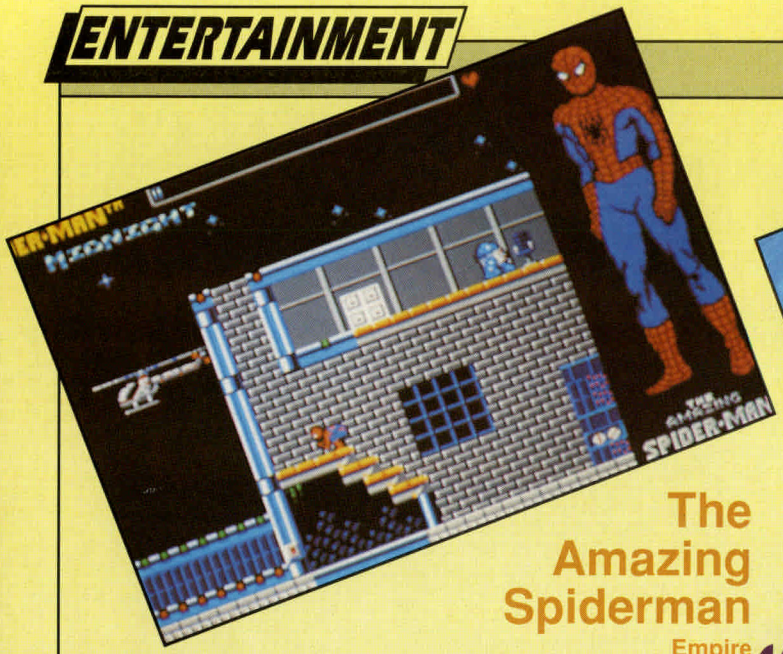
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The Amazing Spiderman

Empire

Spidey fans may remember a couple of web-slinging games from days gone by. The Scott Adams adventure game and the Atari VCS games bore no relation to each other, and nor does this latest binary interpretation of The Amazing Spiderman.

A flip-screen arcade adventure is the format, in which you're set the task of rescueing Mary Jane Watson-Parker from the evil Mysterio. The game has you attempting to reach Mysterio's hideout in a massive film studio. Sets from various films lie in your way, most of which have been blocked off or booby trapped. Throwing switches and avoiding robots will lead to success. Unfortunately the gameplay is frustratingly slow. All the sprites are tiny, and nothing much ever seems to happen. Unless you're an extremely patient Spiderman fanatic, you'll find yourself dozing off after the first couple of screens.

Rating: 40%
Price: £24.95

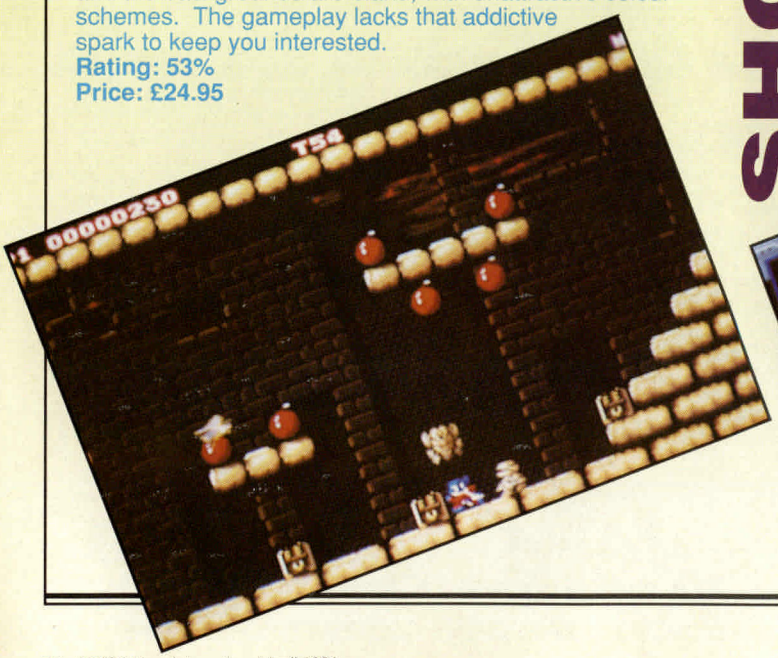
Mighty Bombjack

Elite

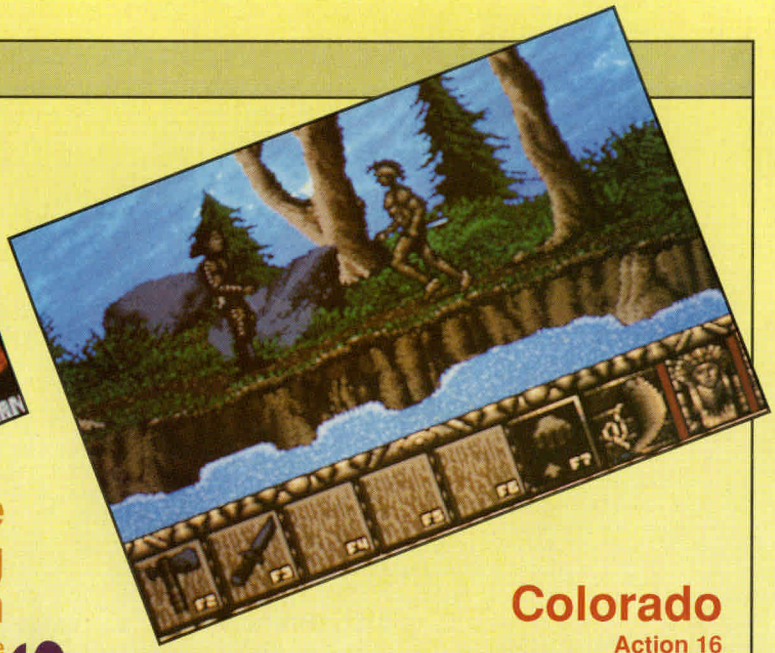
Bombjack is back in his third adventure, which is alas his least impressive so far. The idea is much the same as before. Each screen has to be cleared of bombs before you move onto the next. Bombjack can jump the height of the screen, and can also hovver, but has no other means of evading the various nasties.

The screens are now bigger than before, scrolling from left to right. Although there's a cute title screen, the rest of the graphics are rather weedy. The sprites are poorly animated, and the backgrounds are bland, with unattractive colour schemes. The gameplay lacks that addictive spark to keep you interested.

Rating: 53%
Price: £24.95



SHORT REPORTS



Colorado

Action 16

Written by Silmarils, Colorado is another arcade adventure in the mould of Targhan, Maya and Starblade. This time it's set in the Wild West. Three stages make up the game. The main gameplay takes place around a collection of flip-screens, in which you encounter hostile indians and sniff out interesting locations. Once you've exhausted one set of screens, you can get in your canoe and move on to the next bay. This is presented in slow-moving, but strangely effective 3D sequence. You also get to do a bit of trading with Mac Biggle the storekeeper.

At times the controls can be irritatingly slow to react, causing you to leap to your death by mistake. Salt is rubbed into the wound as you realise you only get one life. You can save game positions however, and for the price you get a fairly original arcade adventure.

Rating: 70%
Price: £4.99

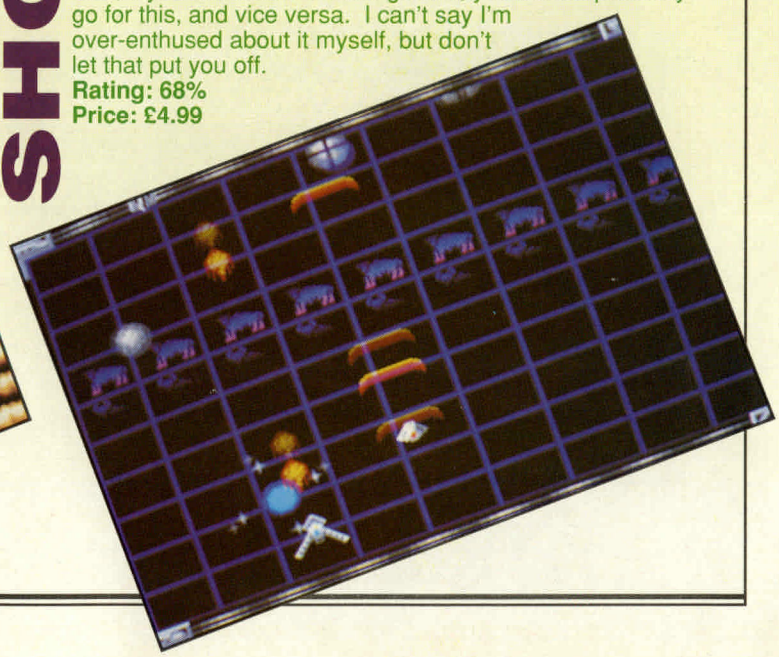
Super Gridrunner

Action 16

Long-time fan and programmer of shoot 'em ups, Jeff Minter has built up a cult following over the years. His style of simplistic, but often highly original zappers, sprinkled with guest appearances from llamas, camels, goats, sheep and the like, is loved by many, but completely disregarded by others.

Super Gridrunner is a typical Minter shoot 'em up, and in many ways is a return to the days of Space Invaders. The main difference is that you get a detatchable nose-cone, which can be used as a second laser gun. Newcomers would be well advised to give it a test run. As for everyone else, if you like Minter's other games, you'll most probably go for this, and vice versa. I can't say I'm over-enthused about it myself, but don't let that put you off.

Rating: 68%
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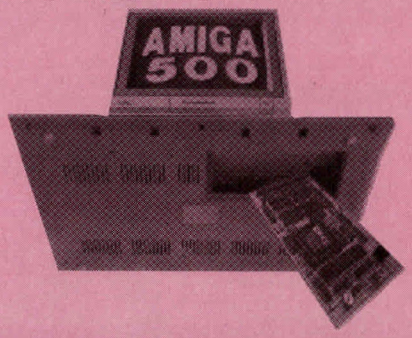
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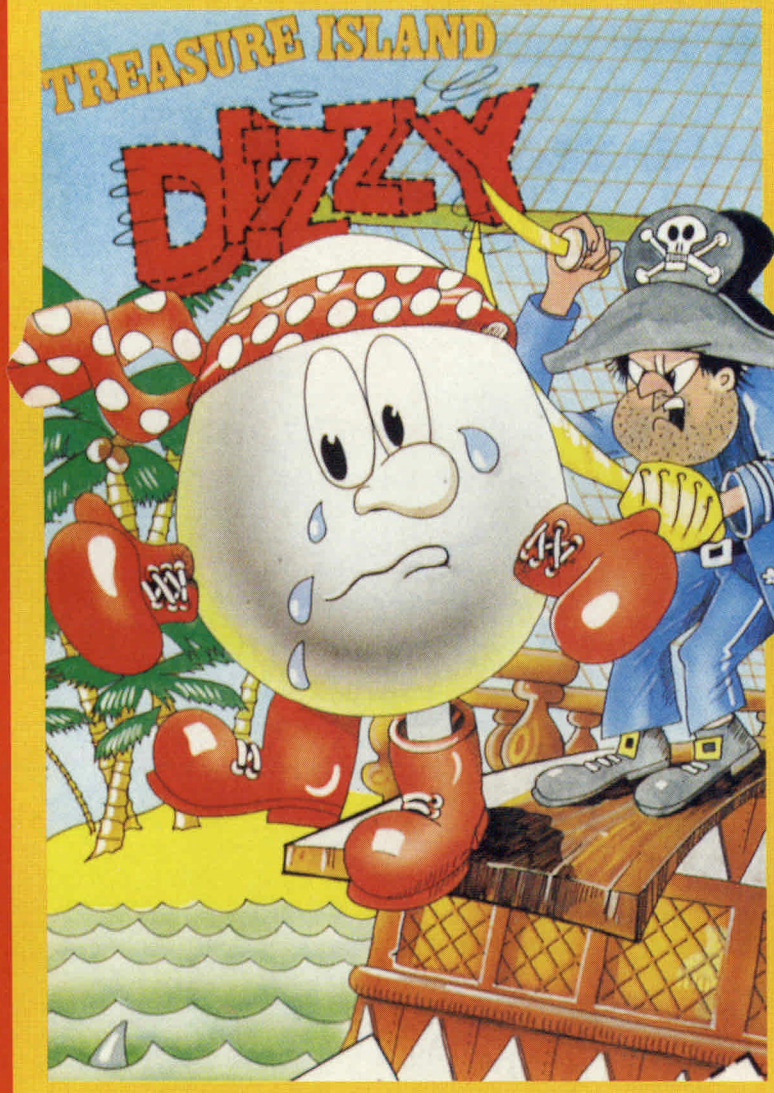
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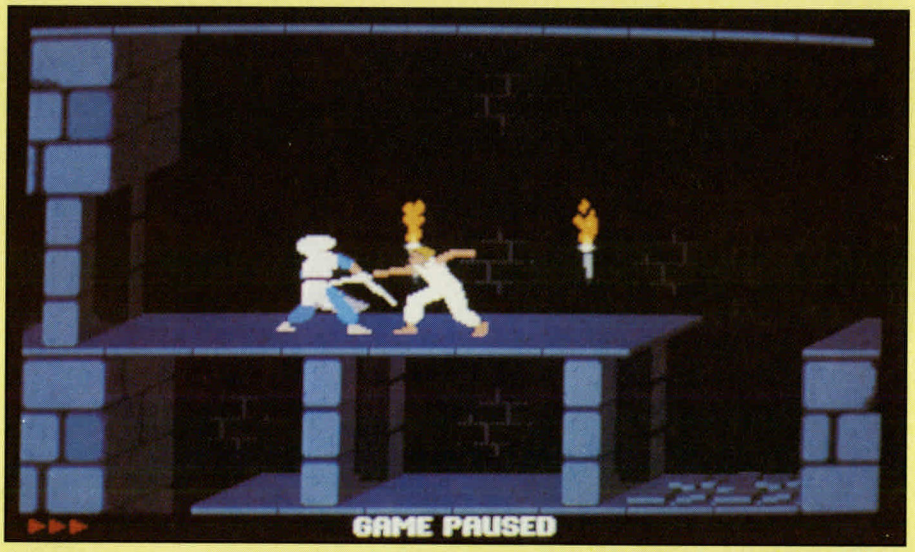
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Prince of Persia:
The play guide

Infuriating isn't it? Spend what seems like hours yanking your sweaty joystick this way and that, and what happens? You gallivant of the edge of a shaky platform and plummet to your doom, impaling yourself on a cluster of spikes as you reach the ground. What better way of passing the time?

Now, we could just give you a blow-by-blow guide to completing each level, but that would be the easy way out. Instead, here's AUI's exclusive playguide to Broderbund's excellent Prince of Persia. Some of it may sound pretty obvious, but follow these guidelines and you won't go far wrong.



1. Stay in control

Just the basics of controlling the Prince can be confusing. It's very easy to panic when faced with an unexpected situation, but keeping a cool head is very important. If things are getting on top of you, the best thing to do is just stop in your tracks. Moving the joystick in the opposite direction that you're running isn't the best idea, as you tend to slide further in your original direction, and then find yourself running into trouble the other way. Releasing the joystick is both the quickest and safest way to stop.

2. Swordfighting

Use the guards on the first couple of levels as sparring partners. Get to grips with the timing of blocking and countering, even though the early guards are easily killed. Be patient. Wait either for your opponent to step within striking range, or until he goes for you. A quick block followed by a stab should do the trick. When you enter a room with a guard, make sure you don't run or jump into him. Stop and get your sword out before you get too close.

3. Proceed with caution

When exploring new rooms, be careful not to run into traps. Take a single step into any new room, and check for loose tiles by jumping on the spot. If you see a hole in the floor that seems to lead off the trail, have a snoop around, as a lot of them contain energy potions. Some holes however, are just the tops of massive shafts, so check what's below by hanging from the floor above. You can always climb back up if you discover a sheer drop.

4. In general

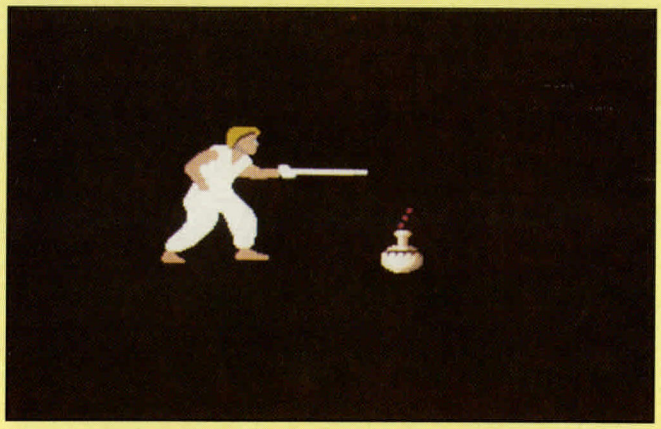
If you're pushed for time and faced with a quick dash across a few screens, use running jumps when you can. They're just a little faster, and can make all the difference.

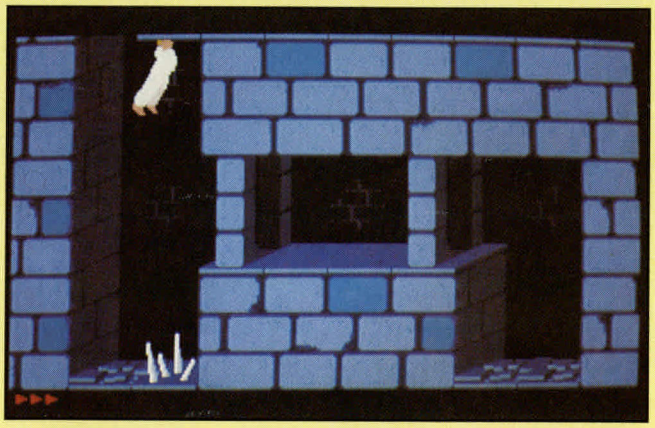
If you find yourself falling, even if it seems futile, hold the button down. That way, if a handy ledge does come your way, you'll grab hold of it. Leave it until you see the ledge and it may be too late.

Leaping through iron-jaws is spectacular, but careful steps are a lot safer.

Don't be your own worst enemy.

T.H.





Boomeraid

Maths can be fun? Stone the crows, says Mike Nelson, you must be joking, digger!

From the same stable as the Lightforce package, reviewed last month, comes another offering in the shape of Boomeraid. It uses the same basic approach of a sequence of tutorial screens with a cleverly worked game attached for good measure.

The subject matter is graphs and the mathematical equations which describe them. The teaching method is a series of structured screens, divided into a dozen chapters which give the basic information about how graphs work, starting with the simplest straight line, once the business about axes and coordinates has been delivered. Older readers may remember from their school days that all graphs are derived from an equation, and the term "y = mx + c" may strike a note of terror in some hearts. The program explains the various components of the equation and illustrates how varying them will affect the line or curve drawn. At this point, one of the most useful features of the program comes into play, and that is called "Mathbench" where the computer can draw almost any graph you would want. You can vary any of the right side of the equation with clicks of the mouse button, and the consequences are instantly shown.

Straight lines are a pretty elementary introduction to the subject and the subsequent chapters deal with all manner of weird and wonderful curves like parabolas, hyperbolas, ellipses and sine waves. They are all examined quite thoroughly and their various characteristics explained in a style which is both informative and friendly. The typically Australian laid back approach to a potentially difficult subject makes a refreshing change from all those boring textbooks (and, dare I say, teachers?).

Any educational software should give the user some means of assessing their progress and understanding of the subject being taught, and Boomeraid is equipped with two options on the Mathbench screen to do just that. Firstly, there is the "Exercise" icon and selecting this causes the computer to display a graph in red which you must try and match by editing the equation in the box below. Eventually your blue line will be superimposed on that of the computer and you will be informed of success. The other self-assessment aid is the "Test" option which asks you twenty questions of the form

"The typically Australian laid back approach to a potentially difficult subject makes a refreshing change from all those boring textbooks (and, dare I say, teachers?)"

"Provide a line which has a slope of 3 and passes through the point (-3,-2)", and in response you have to twiddle with the equation until you think you have satisfied the question. You then select "Mark" and the computer gives you its opinion with a simple response.

A trademark of the TSR Media educational software seems to be inclusion of a game of some description, and you have to use the knowledge acquired in the tutorial section to eliminate a number of undesirables from a park.

The traditional weapon of the Aborigines is your method of destruction to wreak havoc among said bad guys. The idea is quite straightforward in that you play in a scrolling area which represents a park, complete with swings and the like. Inhabiting the park is an array of villains from chain-wielding punks to coat-unbuttoning flashers. When you approach one of these you go into attack mode and get to manipulate a line into a position which effectively joins your man with the target. With a suitable grunt the boomerang is launched and you hope that you got the line and direction right. This is simple enough but the game is complicated by inconsiderate grannies in wheelchairs which obstruct your throwing and hitting one by mistake diminishes your "Brain power" rating. As your score increases, you get more sophisticated equations to play with, so eventually you can send your boomerang along a sine wave and this has the effect of covering a larger area giving you more chance of clobbering the elusive punk.

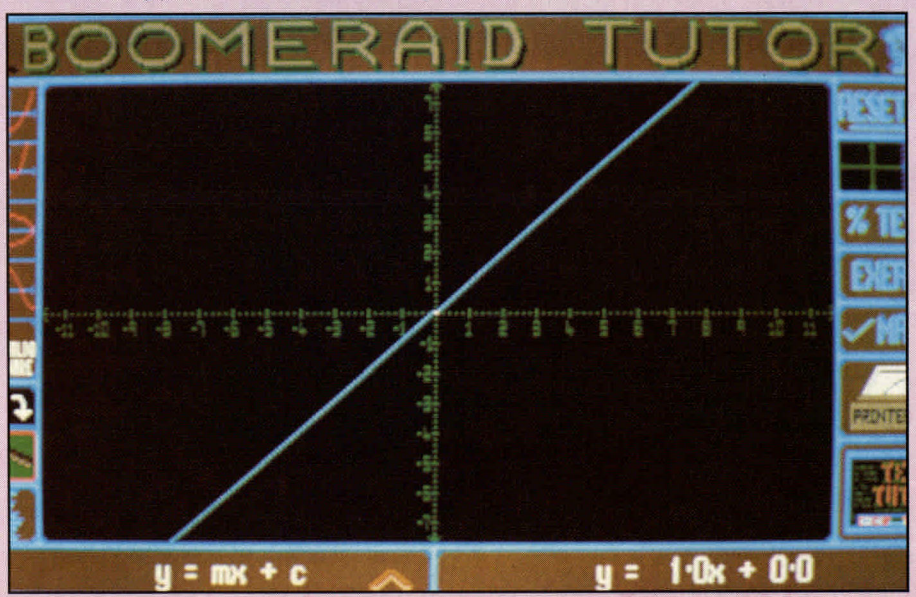
I enjoyed the game aspect of this package and there is a certain satisfaction experienced from sending a boomerang circling around a tennis court before taking out a flasher or "Big Dave Harley".

This is another well thought out package from Down Under which serves to teach quite a difficult subject area effectively. Lucky students who possess Boomeraid will be able to get the Amiga to do their homework (and print it out if you have extra memory), and that in itself must be worthwhile, but there is also quite a challenging game as part of the deal too, so maybe maths can be fun, after all.

M.N.

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PD Games

Fun and Excitement for Free

Hartmut Schumacher dives deep into the Fish pond and comes up with the best PD games . . .

There are great Amiga DTP programs, good word processors, and even ordinary data banks. But why does the Amiga have parts like the blitter and the sound chip? Right - to run games.

Nearly every Amiga owner plays a game sometimes. And apart from a few flops there ARE great games for the Amiga. But even these have a great disadvantage: they are expensive. Not expensive for young urban upwardly moving good earning professionals - but expensive for the average pupil or student who can't very often afford to pay £14 to £25 for a simple shoot'em-up game or even for a more complex Dungeons & Dragons adventure.

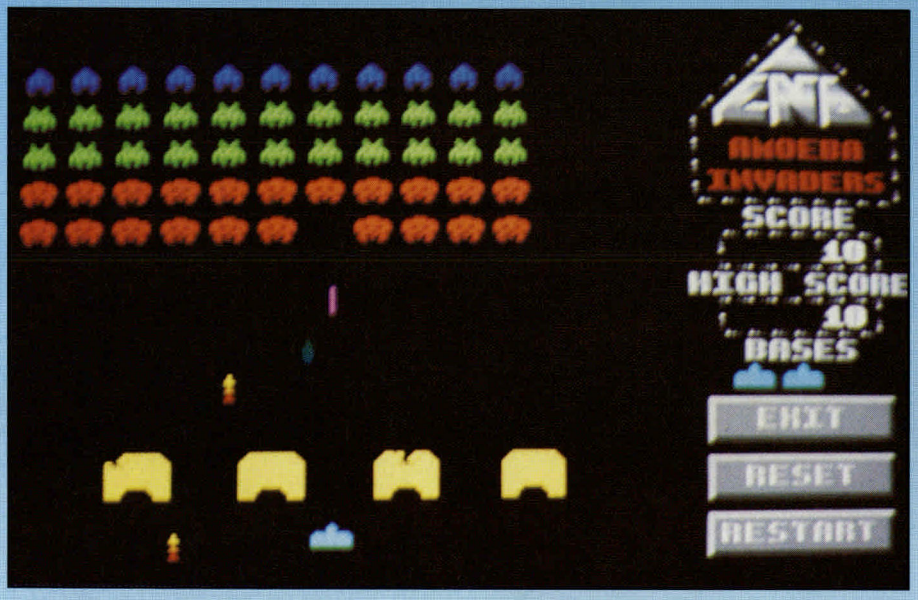
There is, however, a solution to this problem and at the same time an alternative to pirate software: PD games. On public domain disks, there are more than just a few good and very good games. And if you choose your PD dealer carefully you needn't pay much more than £1 per disk. See the advertisers in this issue of AUI for addresses of PD dealers. (Some of those dealers offer special sample disks with only games on them. If such a disk contains one of the following games it probably is a good buy.)

Now let's take a closer look at some of the best of these PD games.

Action games

Drive Wars - Destroy the Virus

Did you ever ask yourself what did all the people do who bought Palace Software's "Shoot Em Up Construction Kit" ("SEUCK")? Well, one of them (Joe Angell) wrote "Drive Wars" which can be found on Fish disk 400. In this "Battle Squadron" clone you and a second player control - via joysticks - the two disk shaped sprites called "df0:" and "df1:". You have to fly them into the floppy drives of a computer to destroy the viruses in it. Your enemies are contaminated disks, electric mice, and deadly chips. The game is a little bit slow, but on the whole very playable and has nicely drawn background graphics and sprites.

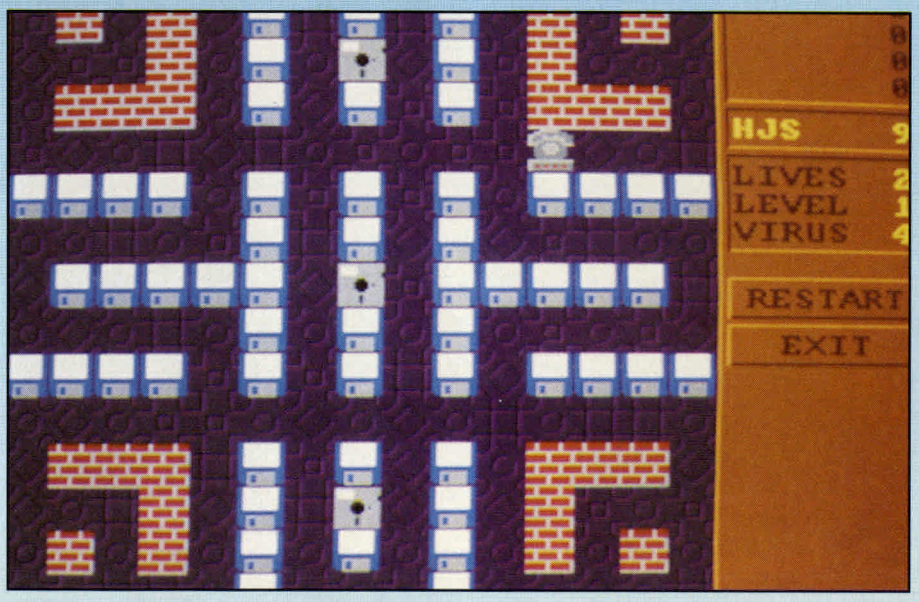


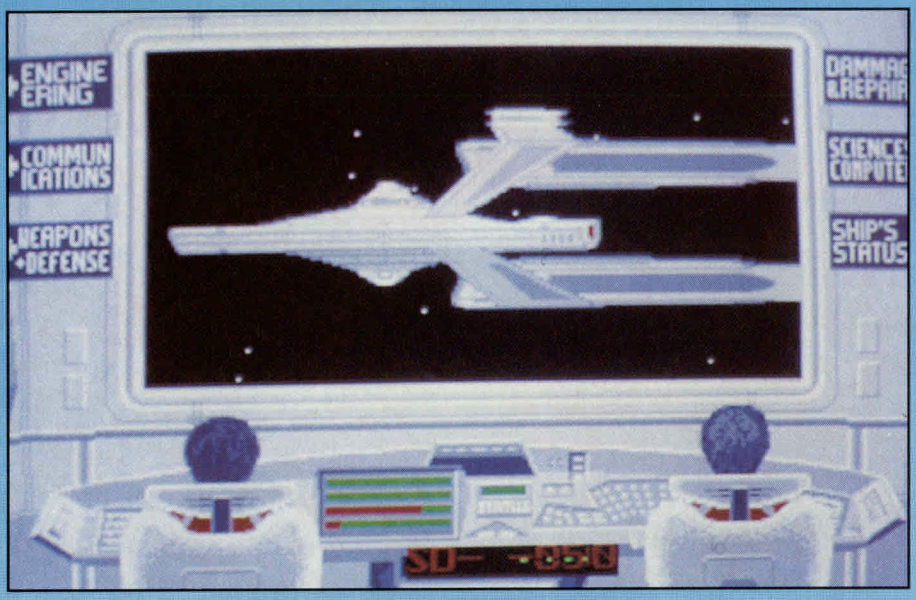
Drip - Ice Cubes and Rust

In "Drip" - the fifteen level game from Art Skiles (on Fish disk 347) - you have to move your "drip" along all the pipes of each level in order to rust them. Then you are allowed to advance to the next level that - who would have guessed? - is more difficult than the previous one. While fulfilling your task you must avoid nasty things like acid drops, ice cubes, razors, and moving enemies like test-tubes and punk drips. To escape them you may ride in bubbles which occasionally appear. Appealing music and funny sound effects add to the addictiveness of this game.

Amoeba - Back to the Past

"Space Invaders" was one of the very first arcade games and since then has been converted for nearly every game console and 8 bit micro - but unfortunately not for the Amiga. "Amoeba" from LateNight Developments is a very excel-





lent PD version of this game and can be found on Fish disk 120. As in the original game, you have to shoot at the downward moving aliens while they are busy shooting back at you. "Amoeba" offers joystick and keyboard control (the latter may be redefined) and - most important - the original look and feel of "Space Invaders". For a touch of nostalgia get this one! (See picture 1.)

PipeLine – Let the Oil Flow

Ando Wichmann's "PipeLine" is a clone of the enormously successful commercial game "PipeMania". Your goal in this game is to build a complete pipeline before the oil starts to flow. To make this more difficult, the pieces you place with the joystick to build the pipeline appear in random shapes. This may not sound too exciting, but believe me: it is. (Thousands of "PipeMania" fans will agree to that). If you buy "PipeLine" (on Fish disk 358) there is very little need to purchase the commercial game.

Sys – The Virus Strikes Back

"Sys" from Anders Bjerin (on Fish disk 336) again deals with the never-ending fight against viruses. You have to clear your system operator's hard disk of those nasty little creatures before they cause severe damage to the stored data. To destroy a virus just kick – via joystick or keyboard – one of the many disks (see picture 2) at a it. There are four types of Viruses: magnets, mice, photo diodes and joysticks. The game has fifty levels, but experienced players may fortunately start at level ten. The seven sound effects – including one courtry music sample – can be exchanged for any other IFF sound file.

MiniBlast – a Multitasking Shoot 'em up

On the same disk there is "MiniBlast" by the same author – a nicely done horizontal shoot 'em up that takes its inspiration obviously from the Sinclair ZX Spectrum game "Penetrator" and similar games. "MiniBlast" runs in a wondow on the workbench and fully supports multitasking. Your task is – of course – "Shoot anything that moves, and if it doesn't move, shoot it anyway", as the author of this game puts it.

Think games

Star Trek – To Boldly Go where no Mouse has gone before

Are you disappointed by the new "Next Generation" episodes of "Star Trek"? Why not try to reanimate some of the atmosphere of the older "genuine" episodes? "Star Trek" by Tobias Richter succeeds in doing this. The two disk game by the maker of the "AGAtron" disks features digitized sounds and music from the "Star Trek" tv episodes and movies in combination with drawn pictures (see picture 3). The game has no clearly defined aim: you just have to stay commander of the "Enterprise" as long as possible – in order to achieve that you must keep the crew (especially Scotty) happy and fulfill the missions you receive from Star Fleet: transport certain goods, machines, medicine or ambassadors from one planet to another (yes, this includes beaming up and down) and of course destroy klingon star ships. All functions of the ship can be controlled by mouse and (when navigating) by joystick. This game is not on a Fish disk, but, for example, on "ByteBack's" disk "AG.03".

Obsess – The Alternative to the Russian Puzzle

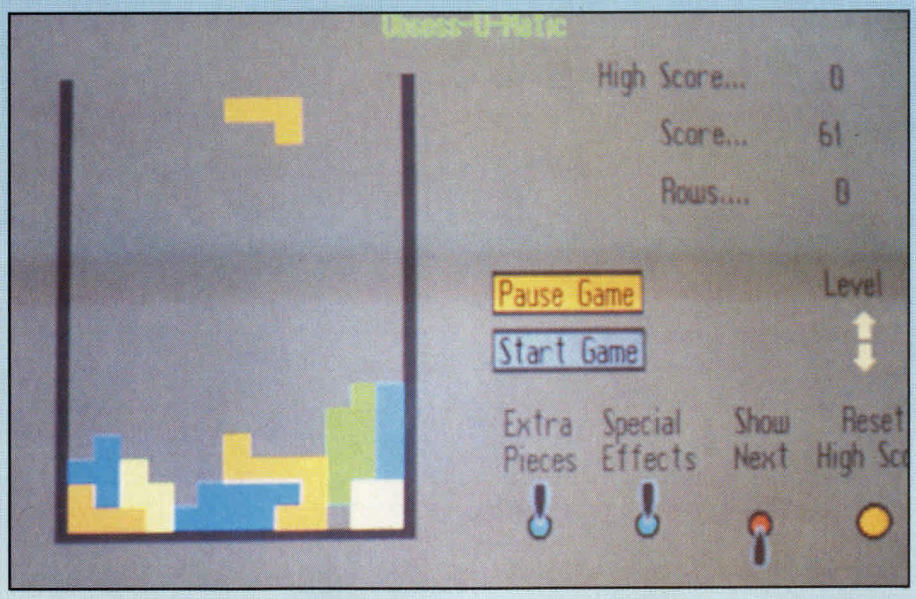
Is there anyone out there who doesn't know "Tetris"? In this realtime puzzle game your aim is to fit falling pieces of different shapes to complete horizontal rows. "Obsess" from Wayne Phillips (on Fish disk 305) is – in my opinion – the best of many PD or shareware versions of this game (see picture 4).

Freud – No Need for a Couch?

This shareware program by George Trepal gives you a Freudian evaluation of yourself and of your friends. If or if not the program is able to save you twelve years of psychotherapy and about £25,000 (as the author claims), it is at least very amusing. It gives you multiple choice questions and tells you at the end what part of the doc file applies to you. "Freud" has a rather astonishing effect: First, you are simply amused, but soon you find yourself thinking very hard to find the most fitting answers to the program's questions. If you want to know some truths about yourself then take a look at Fish disk 105.

MasterMind – Crack the Code

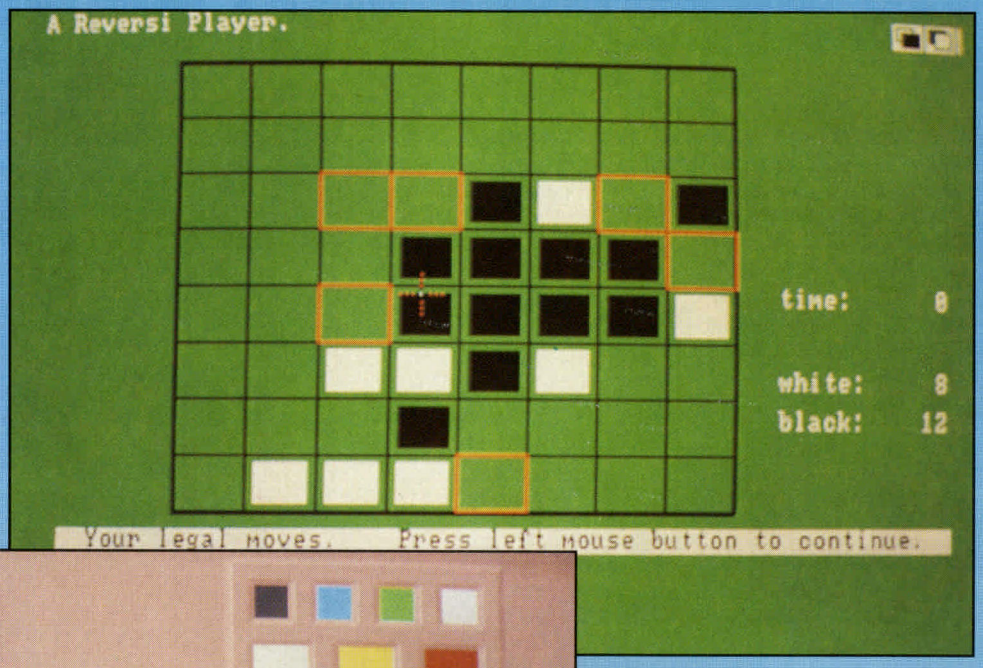
In the classic game "MasterMind" you

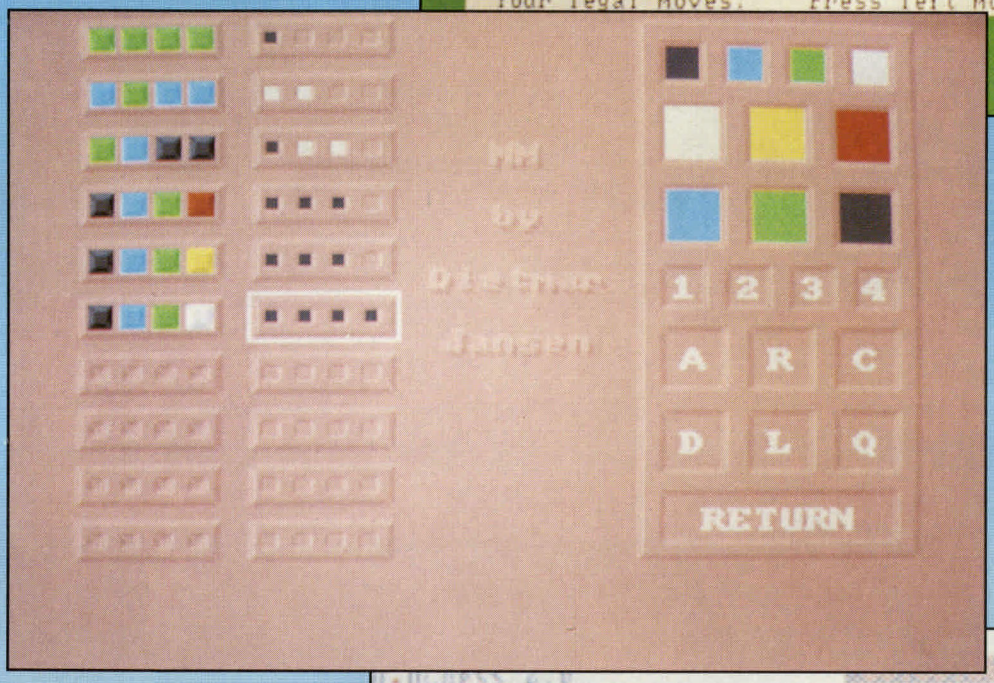


have to guess and to decode a colour combination. Dietmar Jansen's computer version (from Fish disk 327), in which the Amiga determines the combination and evaluates your guesses, uses the colours and the rules of the original game (see picture 5).

Reversi – Carbon versus Silicon

Another classic of the non-computer games (yes, I know it sounds funny, but there ARE games you can play without a computer) is "Reversi" (also called "Othello"). Manuel Almudevar's version on Fish disk 38 (see picture 6) offers five difficulty levels and a voice





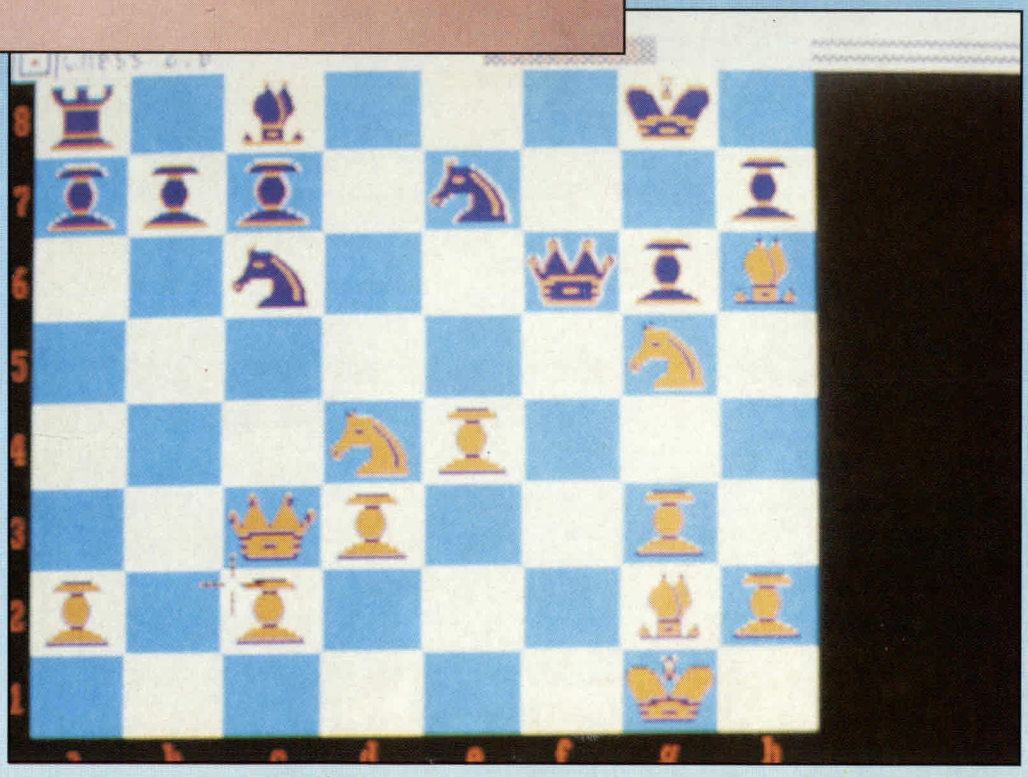
option that produces rather sarcastic spoken remarks.

Chess – Checkmate?

There isn't any need to explain the nature of this game, is there? This version by Bob Leivian, John Stanbeck and A.H.W. Kaufmann from Fish disk 205 is a strong opponent for the average chess player. It has features like hints, list of moves, change sides, save and load the game, and a changeable computer's response time. The chess pieces can be conveniently moved with the mouse (see picture 7).

Moria – Deep In The Dungeon

"Moria" from Fish disk 194 is a graphic dungeon game for one player. You can pick up objects, trade with other persons, and of course fight. The ultimate aim is – as usual – to go down into the deepest level of the dungeon and defeat the monster living there. ***H.S.***



The Fish disks and other PD collections contain many more good PD and shareware games. Why not order a catalogue from one of the PD dealers to find out if there is an Amiga PD version of your favourite game?



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Amiga Format magazine review, February 1990.

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Amiga Computing – October 1990

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3D Pro represents the state of the art in Amiga rendering packages. The program is initially daunting, but once you've got the hang of it you'll be churning out complex ray trace images in no time.

Highly recommended – *Amiga Computing October 1990*

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U.K. GAMES CHART

Game	Company	Last Month	Rating	Price
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2. Indy 500	Electronic Arts	(3)	93%	£24.95
3. Golden Axe	Virgin	(2)	73%	£24.95
4. Final Whistle	Anco	(–)	95%	£12.99
5. F-19 Stealth Fighter	Microprose	(7)	78%	£29.99
6. Robocop 2	Ocean	(8)	77%	£24.95
7. Chase HQ 2	Ocean	(–)	59%	£24.99
8. Car-Vup	Core	(10)	81%	£24.99
9. Lotus Esprit	Gremlin	(4)	86%	£24.95
10. Elvira	Accolade	(–)	93%	£29.99

Watch for the increasingly popular Speedball 2 to hit the top 10 soon and you bet these infuriatingly delightful Lemmings from the consistantly original Psygnosis will come marching in. Will virtue be rewarded and Broderbound's Prince of Persia rise to the top? It depends on you!

Recommended Games

of the past three months

Each month we review a whole pile of games; some awful, some good, occasionally some terrific. Some of the best never even get into the charts. In this new section we recommend games which have been the best in the past few months to keep you updated when you part with your hard-earned cash. There is so much hype around, our un-biased and analytical approach should be a good guide on what to buy. Games we recommend have to be worth every penny – You can believe that.

Lemmings
Psygnosis
£24.99
AUI Rating: 100%
If you only ever buy one game in your life it's got to be Lemmings. Lemmings is based on a race of simple creatures who will walk into Psygnosis' death traps. Using various skills which you can bestow upon these Walkers you can prevent them from dying and save the Lemming race. It's new, and addictive, with four different game difficulties from fun to mayhem. You'll not find another like it.

Harpoon (1 Meg only)
Mirrorsoft
£29.99
AUI Rating: 94%
For lovers of strategical warfare, especially naval, this simulation from the States is an accurate presentation of current military strategies. Several missions are available to you, as commander of a task force either on the side of NATO or the Soviet Union. There are several "realism" settings which allow for easier, or harder, gameplay. The developers are also creating data disks with different scenarios and missions.

Indy 500
Electronic Arts
Price: £24.95
AUI Rating: 93%
EA's simulation of America's Indianapolis 500 race combines a high level of technical detail, with spectacular fast-moving gameplay. Solid 3D graphics are used to portray the cars, track, pitlane and grandstands from just about any viewpoint you choose. Despite the highly detailed graphics, it's one of the fastest race games around, deserving the attention of all boy-racers.

Prince of Persia
Broderbund
Price: £24.95
AUI Rating: 92%
A brilliant arcade adventure from the creators of Loderunner, Wings of Fury and Choplifter, Prince of Persia is one of the most compulsive games released for months. What at first seems to be a mundane and graphically dull game is uplifted by some superb character animation and devious level designs. Don't be deceived by its unexciting look in still shots. Get a copy ASAP.

Speedball 2
Image Works
Price: £24.95
AUI Rating: 91%
Spikes, rivets, balls and helmets may all sound a bit kinky, but sex fiends will be disappointed to find that Speedball 2 is a violent future-sport. Steel-plated arenas are the venues for this barbaric variation on indoor soccer. Setting new standards in graphics, with top-notch sound effects and gameplay, Speedball 2 is a bare essential for armchair sportsmen.

Turrican 2
Rainbow Arts
Price: £24.95
AUI Rating: 90%
Turrican is a robot on a mission. His mission: to seek out and destroy The Machine, which has enslaved the land, bringing destruction and death to its inhabitants. Your upgradable laser, bounce bombs, plasma bolts and ability to change into an indestructible spiked ball will all help you. Graphics and sound are both top-notch, with superb scrolling, massive level guardians, loads of big weapons and a fair bit of variety. The best shoot 'em up released in a very long time.

Mega-Midget Racer

Mike Nelson straps on his skidlid and finds out how to turbo-charge your Amiga...

The Amiga is a pretty swift computer, but sometimes you yearn for that extra little power to make your programs really fly. A 68000 running at just over 7 MHz with the help of the Amiga's custom chips will play some excellent games, compile programs at a respectable rate, and generate nifty pictures with ray-tracing programs, so do we really need anything faster? Having used a 68030 hammering away at 33 MHz with a 50 MHz maths coprocessor and 8 megabytes of 32-bit RAM, the answer for me is a loud and clear "YES!". The product under test is the CSA Mega-Midget Racer, an expansion board which plugs into either an Amiga A500 or B2000 machine to provide the aforementioned power.

"Fitting the board is not a procedure for the faint-hearted, as although no soldering is required, your Amiga must undergo open heart surgery"

There is a variety of combinations of hardware from which you can choose, and I will describe the merits of them later on, but the test kit came as two small PCBs joined together, with all the chips in place. Bytes and Pieces will supply the hardware, configured to suit your requirements. Fitting the board is not a procedure for the faint-hearted, as although no soldering is required, your Amiga must undergo open heart surgery, thereby consigning your warranty to serious oblivion. Undeterred by this calamity and with the manual and a couple of screwdrivers, I pressed ahead to dissect my Amiga 2000, removing the power supply and disk drive mountings to get access to the 68000 on the main motherboard. The processor was duly removed and placed aside for safe-keeping (the depressing prospect of having to give the review board back was foremost in my mind), and the Racer board substituted in its socket. You need to apply quite firm pressure to locate it (testing the nerves even further), but be careful of the pins which may buckle. The rest of my computer went back together easily and power-up revealed that despite the odds, I had managed to re-connect everything to the computer's satisfaction and the familiar hurricane of the fan whirred into life. Booting with the supplied disk revealed a self-test and configuration program which informed me I was using a 68030/68882 combination with 8 Megabytes of functioning 32-bit RAM. Kickstart had been relocated in said 32-bit memory and all was well.

I was pretty pleased to see my hard disk partitions were also present on the Workbench screen which displayed some astronomical amount of memory available (11 Mb in total, I usually have 3 Mb so this was quite a shock). Numbers don't mean an awful lot, so I had a go at some programs to find my Amiga was working like Ben Johnson on steroids. With the Racer, everything from disk access to Intuition is speeded up noticeably. Some everyday speed tests are shown in Figure 1., but the most impressive increases are for rendering ray-traced pictures with programs that support the maths coprocessor like Sculpt-Animate 4D. The version I used was tailored specifically for the 68030/68882 board and the improvements in rendering times meant that a three-week cruise around the Caribbean during a complicated session is out of the question, unlike on the native Amiga, which gives you time to make a dent in the duty free as well.

Gone are the days of making coffee as your C compiler ruminates over a lengthy program, or nipping out for chips as Professional Page re-draws the screen; using a board like the Racer will increase your productivity immensely. The only disappointing compatibility problem was Commodore's very own AmigaBASIC which refused to load any programs into my bionic computer. This seems to be a software problem which should be addressed by the guys at West Chester or whoever looks after BASIC these days as it works perfectly in 68000 mode. Other than this minor inconvenience, all other software tested ran happily with the 68030, excepting some games, which is only to be expected as games programmers are not renowned for playing by the rules of the operating system.

"Finally, should you experience problems with software (notably games) not working with the 68030, there is a 68000 also located on the Racer with a program to kick it into life and re-boot the computer"

Let us now take a closer look at

the hardware. The design of the board is most impressive: it is expandable so you can start off with a basic system and add bits like a floating point coprocessor or extra 32-bit memory as your pocket will allow. If you start out on an A500 and wish to upgrade to a 2000, then your investment is protected as the board will fit into both machines without any modification. Finally, should you experience problems with software (notably games) not working with the 68030, there is a 68000 also located on the Racer with a program to kick it into life and re-boot the computer. It is worth pointing out that any 32-bit memory you possess is unavailable when the Racer is in 68000 mode. Additionally, any ordinary RAM expansions (like those in the A590) are added onto the 32-bit memory (in 68030 mode) to be used if the latter runs out, an unlikely situation with 8 Megabytes to play with.

Another big plus point for the Racer is its compatibility with other hardware. Some of the other boards on the market will match the speed of Racer, but require that you use the manufacturer's own (non-standard) hard disk drives, for instance. This is a real nuisance if you have shelled out major-league dosh for an A2091 from Commodore, but the Racer coped admirably with mine, perhaps even speeding up loading slightly. However, I would recommend checking with Bytes and Pieces if you have any other add-ons in case there are problems. I suspect that A500 users may have difficulties because of the measly power supply of the computer which panics if there are more than a couple of extras on board.

The software supplied with the product is simple enough to use. The main program is called CSA-MMR and is inserted into your startup-sequence on the Workbench disk. Essentially, all this does is configure the system and test the various bits of the board. Also on the disk is a handful of utilities, one of which shows you just how fast your system is flying, by drawing some nice Mandelbrot pictures in double quick time. Running the same demo on a bare Amiga can be up to 80 times slower, but this test is not representative of the usual increases in speed as shown in Figure 1. The reason for this is that the program utilises the number cruncher to a far greater degree than most other programs so although very real, the gains in performance are disproportionate.

The other programs control certain aspects of the 68030's function, turning on various data caches. The manual is particularly uninformative about these options, limiting its explanation to stating the obvious and not yielding any useful information about when to change these settings. Playing around with them seemed to have few mind-blowing effects, but this was a shot in the dark, so a little more enlightenment would have been welcome. On the whole, the manual is satisfactory with clear explanations, supplemented by diagrams, about fitting the board to the various computers. Because there are several hardware combinations possible, the board has a number of jumpers (little switches to inform it what is fitted), but Bytes and Pieces will take care of these for you and you only have to worry about them when you upgrade the system. The settings are fully documented in the book of words.

With regard to the combination of kit you are likely to require, bear in mind the following points. If you use your computer for any serious application (and I don't mean blasting aliens to pieces) then you will notice a big difference in a Racer-enhanced Amiga, whatever combination of hardware you choose. Programmers will see the time for the compile/edit cycle shrink, increasing your personal productivity appreciably, and anyone with an interest in graphics who uses any of the standard Amiga art packages will soon be left wondering how they managed on that Oh-so-slow 68000, just as they did when they first compared its performance to a 1 MHz 6502. You can easily get caught in a spiral of escalating cost for smaller gains in speed; it is a bit like high performance cars and spending an extra #20,000 to put 20 mph on the top speed, which you are unlikely to reach anyway. The figures would suggest that the optimal budget system would include a 25 MHz processor, the 32-bit shadow RAM and as much other memory as you can afford, but perhaps the floating point coprocessor could wait, unless your application specifically required it. Of course, if you have lots of dosh, the 33 MHz processor will leave an A3000 standing.

It is difficult to find fault with the Mega-Midget Racer as it is so flexible and very good value for money - I don't think you can buy a cheaper 68030 board, but prices change so rapidly that I may be wrong on that one. The only major problem with this product was that I had to give it back!

M.N.

Price: ***Starts at £375 for 25 MHz board. Ends somewhere in the £1000s***
Contact: ***Bytes and Pieces, 37, Cecil St., Lytham, Lancs, FY8 5NN. Tel: (0253) 734218.***

Timings of *AUI* Tests.

SRAM	68030	68000
Perspective function on DPaint III	**1'22"**	7'43"
1'43"		
Compile & Link 500 line C program.	**27"**	58"
33"		
Count 20,000 words, Word Perfect.	**5"**	28"
6"		
Professional Page:		
load & display document	**42"**	1'16"
53"		

On average, you will see a five to ten fold increase in speed when using a Racer, depending on the work you are doing. Shadow RAM will significantly improve the performance of the Racer, especially when using operating system intensive programs. Rendering with Sculpt 4D was even faster than the above timings may suggest because of the heavy-duty maths involved. Good, isn't it?

A few technical points

68000: *This is the processor chip in a normal Amiga. The first of the 680x0 series, it runs at 7.14 MHz and can access up to 9 Mb of RAM.*
68030: *A very powerful big brother to the 68000, comes in various speeds, usually 16, 25 or 33 MHz, but a 40 MHz version is coming soon.*
68881/2: *These are number crunchers, chips dedicated to mathematical procedures and controlled by a 68030 in this case. Programs have to be specially coded to utilise these chips. Can get up to 50 MHz.*
Cache: *The 68030 has a kind of internal RAM setup which means it can store small chunks of code and data inside its doings. Therefore it does not have to access RAM to execute such code and can run it blisteringly fast.*
Clock speed: *Determines how fast the system runs. Everything in the computer is precisely timed (by an oscillator circuit) and the higher the rate, the more instructions are executed in a given time (i.e. more work gets done). Note the Racer has two oscillator sockets, one for the 68030 and one for the 68882 which can therefore be clocked separately up to 50 MHz.*
RAM: *Memory comes in various shapes and sizes, and the Racer lets you take full advantage of 32-bit technology. The native Amiga has a 32-bit processor (i.e internally it can handle big numbers), but can only access 16 bits of data at a time. Doubling this to 32 makes the Amiga that much faster.*
Shadow RAM: *Kickstart is normally contained in ROM which is 16 bits wide, and the Racer can copy the operating system into some lightening-fast 32- bit memory, called shadow RAM. Speeds up the everyday operations like Intuition or screen rendering.*

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ACE/G017
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X-COPY Professional

Have you backed up your data? If not, you had better follow Pat Kelly's lead and think about doing something to protect your software...

As the name suggests this version is the deluxe in the series of the several versions of X-Copy and will back-up all that its predecessors can, and more! Pro is supplied on disk with an optional hardware dongle, for use with the Cyclone III backup utility. The disk contains six useful utilities, each accompanied with a software document which replace the more conventional method of paper manuals.

There are three backup utilities in the package, and three supporting utilities. The backup programs are X-Copy Professional, Cyclone III, and Xpress. Each has a different purpose: X-Copy Professional backs up specific sectors; Cyclone III is for complete disks; and Xpress is to backup hard disks. The three support utilities are: SetupPro sets the startup preferences of X-Copy Pro; Xlent is a CLI disk handler utility; and Qued the Quick programmers' editor.

X-Copy Pro

X-Copy Pro is like its predecessors in look and operation, but has a few minor enhancements which make it much easier to use in a professional environment. These are:

A new menu display when choosing which backup program or tool to use. The method incorporated is much easier and gives the user a greater sense of control.

A disk directory utility with a proper file requester is incorporated allowing contents of disks, being backed-up and written-to, to be displayed before making the final decision to go! When a verify error is reported it is now possible to either (r)etry or (c)ancel via the keyboard; disk operations can be frozen and restarted with the right mouse button;

The "Disk info" command highlights which tracks are blank, how many sectors on individual tracks are free and also the amount of total disk space (percentage) is free. It uses codes in the disk/track display grid to display information which is useful as the utility will be used, more often than not, to backup particular sectors of a disk. QFormat executes a quick format of previously formatted disks - data will not be removed from the disk, but AmigaDos will not recognise it and will overwrite it. Bamcopy+ is an extension of the Doscopy+ command; it acts in the same manner, but will only backup actual data and empty sectors on the disk will not be transferred. Bamcopy+ is a worthwhile addition which speeds up disk backups.

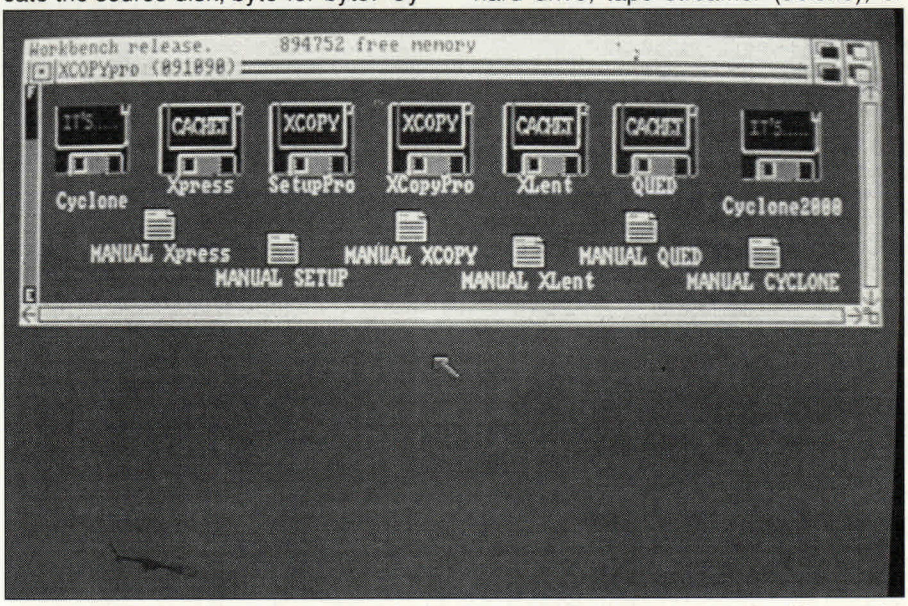
Cyclone III

Cyclone III (and Cyclone III 2000 for A2000 owners) is a disk to disk duplicator. Many protected disks cannot be easily backed up due to advanced software protection routines, but Cyclone can backup more than other copiers. It requires a hardware dongle (supplied) and a second disk drive (df1 or df2 for A2000 owners), and attempts to duplicate the source disk, byte-for-byte. Cyclone-type copiers are also in the protection developers' list of dangers so some of the latest software has immunity from these backup utilities.

Included as part of the software is APWM - Advanced Pulse Width Modulation - developed to beat the very best of protection systems and gives the users the backup they will try almost anything to get. That is the theory anyway. There are no instructions for APWM and its developers claim that the version included is an in-development version. They do not claim it works and we could not make any sense out of it.

Xpress

Xpress is the hard disk backup/restore utility. The main installation is documented well and is the only part of using this utility requiring study. Once all of the paramaters have been set the system will backup your hard disk requesting a new disk to be inserted at various intervals. The backup disk may be another hard drive, tape streamer (deluxe), or



The full menu for X-Copy Pro. The manuals are auto-displaying and each utility can be executed and exim without disrupting the normal running of Workbench.



The Cyclone III disk backup requires a hardware dongle and a second disk drive. It will duplicate a disk from one drive to the next.

floppy disks - which do not have to be pre-formatted. There are a few function settings which allow variable degrees of control and information feedback, such as only saving information which has been changed since the last backup and read/write errors on backup disks (N.B. this does not mean that your backup has failed as the utility ignores bad tracks). The Restore function will restore previous backups onto your, or a friend's hard disk, replacing existing files if required.

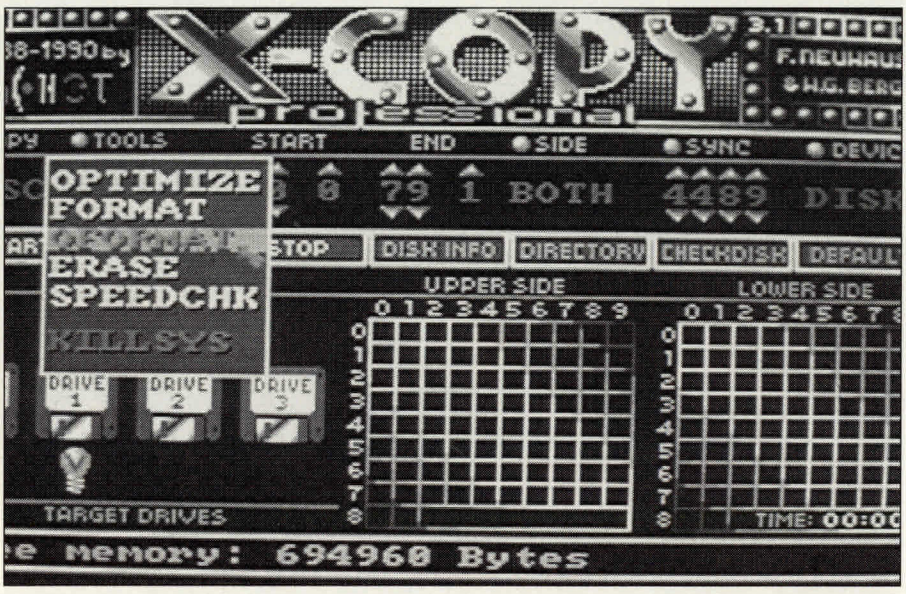
With anything between 20 and 100 floppy backup disks, depending on the capacity of the hard disk, what if you wrongly label disks? Don't worry because if you insert the backup disk it will appear on the workbench with its own unique serial number e.g. X0023 is backup disk 23.

Three very different backup utilities in one compact package, but there is more...

The support utilities will find their critics and devotees, they include a CLI help and a quick editor utility, QUED, for programmers, which is also available seperately. On their own they may be seen as competent utilities, but with X-Copy Professional they round off an exceptional utility with a bit of thought.

All-in-all, I think that a package like X-Copy Professional will save many Amiga users a lot of anguish for little relative cost and advise anyone who has an expensive, or valuable, software library to buy this package now! It is the best.

P.K.



The Pro user interface. It looks similar to its predecessors, but menu systems are amongst a few of its enhancements.

Backup for beginners?

When you are facing a crisis and that latest peice of expensive software has breathed its last, WHO is going to help YOU out? Now, of course, it is too late...you should have made a backup...shouldn't you?

It comes to each of us sooner or later... if it is data that is lost, the cost may only be a few hours typing, or a few hours extra research, though it may be worse still if a hard drive goes under, but if it is a piece of commercial software you may have used it for the last time. Trying to get a replacement working copy is, in some instances, like trying to get blood out of a stone.

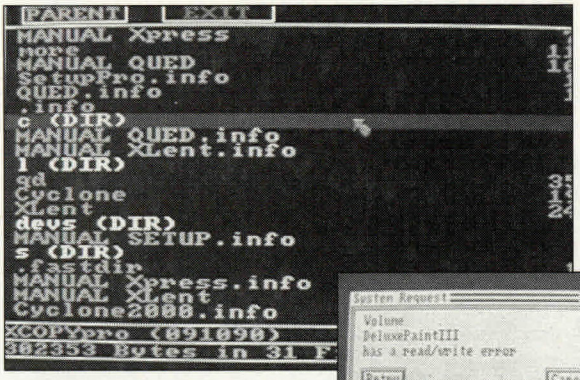
The reasons for the suppliers stance is related to production costs of replacing the disks - when a load of software is returned because of user error it won't take just the cost of the disk and P&P to pay for it - someone has to stop what they are doing, order up copies from their warehouse (another saleable copy destroyed) and record the sender's details in an accessable file. However, many users (most not pirates, as such) experiment with original disks and end up ruining them.

A second reason is piracy. The difficulty of the situation is also increased by the policy of commercial outfits of protecting their software from the greedy hands of would-be pirates. By including protection systems on their products those users who would casually copy a disk and hand it to their friends would be stopped. Furthermore, companies would halt pirates who bought the original, made numerous copies of it, and sold the copies at substantially lower prices to anyone who would join them in their criminal activities.

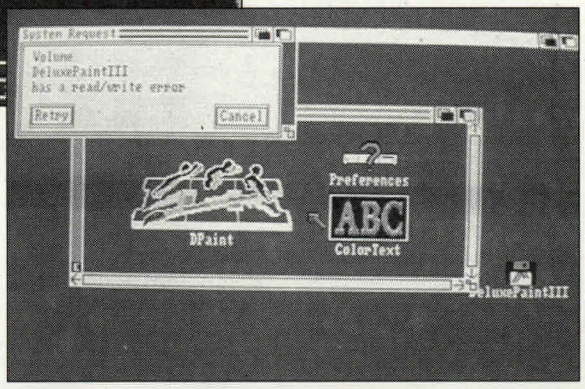
This protection policy has annoyed experienced, and intelligent, users and threw a challenge down to the pirates. Casual "schoolyard" accomplices were now in the hands of the pirate if they wished to obtain cheap non-documented software. Many did and created a demand for the pirate who could make more money from it than commercial concerns. Pirates became hackers - everytime a new protection system was created it was circulated amongst hackers and broken within hours.

Experienced computer users also became hackers - believing that if they had spent between twenty and several hundred pounds for software they had the right to make backups. Especially since there was a chance that they would not receive replacements if their disks ever became damaged by accidental means or wear-and-tear.

X-Copy soon became the standard backup system. Initially written by either pirates or professional system programmers, it was the package to use and has been implicitly accepted by commercial concerns. Several years after the emergence of the original X-Copy Professional has been released.



X-Copy Pro - the utility now has a disk directory function which can read from a drive highlighted as the source and has a file requester allowing directories to be displayed.



The price of failure! It is not only the cost of replacement - what about the time lost while the product is being replaced?

Glossary - taken from The Collins Pocket Dictionary

backup, back-up adj. 1. alternate or auxilary 2. supporting -n 1. an accumulation because of a stoppage 2. a support or help

Cyclone (si'klon) n.[<Gr. kyklos, circle] 1. loosely, a tornado or hurricane 2. Meteorol. a storm with strong winds rotating about a moving centre of low atmospheric pressure - cyclonic (si'klon'ik) adj.

professional adj. 1. of, engaged in, connected with, or worthy of the standards of, a profession 2. earning one's living from an activity, such as sport, not normally thought of as an occupation 3. engaged in by professional players [professional boxing] 4. engaged in a specific occupation for pay -n. a person who is professional -profes'sionalism n.

P.K.

Product: X-Copy Professional with Cyclone hardware
Price: £39.95

Product: Software upgrade
Price: £7.00

Product: Cyclone III hardware
Price: £10.00

Product: QUED (version included with X-Copy Professional)
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84-86 Princess St.,
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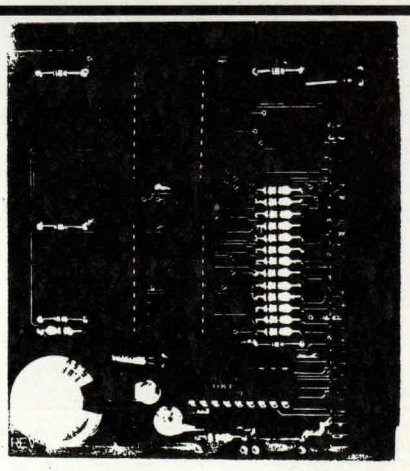
Software Piracy is illegal. Amiga User International in no way condones the use of backup utilities to be employed in distributing illegal copies of software. If you know of anyone who is distributing illegal software contact F.A.S.T. (The Federation Against Software Theft) on 071-497-8973. You could receive up to £1000 cash in reward for your actions.

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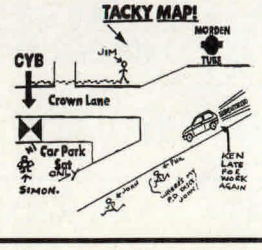
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GBRoute

Pat Kelly gets shown where to go . . .

Three years ago I was shown AutoRoute, a GB road route planner. Unfortunately, at that time, it was only available on the PC, and priced at £250. The product was later released for the Atari ST at £150, but no Amiga version was forthcoming although one was originally planned.

Complex Computers have now redressed the Amiga's lack of a comparable utility with the launch of GBRoute, and at only £39.95 it is a considerably less expensive motoring aid than either of its PC or ST counterparts.

The main function of GBRoute is to offer Amiga motorists the aid of pre-calculated journey routes. It calculates the shortest or fastest route between two locations, distance, journey time, and it will even give an estimated cost depending on the user's cost per mile input. Unfortunately, only motorways and major A-roads have been incorporated in this version, although Complex Computers are already updating the program and will be releasing GBRoute Professional, in the near future, for the more demanding driver.

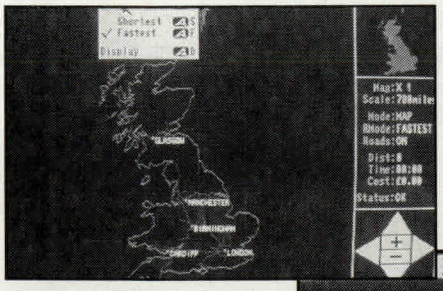
The program auto-boots from Workbench or executes from CLI and is supplied on an unprotected master, allowing a back-up copy to easily be made. The manual is detailed enough to offer guidance and explanation to the product. GBRoute uses the Amiga's windowing/menu-requester system to choose functions, such as printing, route entering, and display modes, and is so easy to use that most some users will not need to read the manual. Execution speed is also fast and the routes are calculated in memory, a few seconds at most. Even detailed maps are redrawn almost immediately.

The current version only supports Epsom 9-pin drivers, so those of us with 24-pin and laser printers cannot access the full capabilities of the printer and must make do with inferior graphic output, or none at all if the printer does not support the emulation - many laser printers will not.

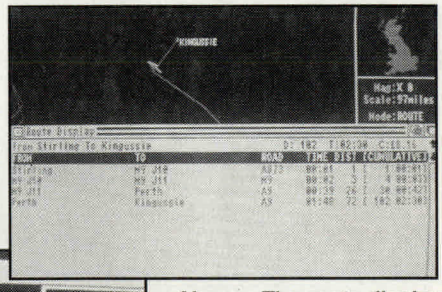
This is an excellent motoring aid and although many locations are not currently supported in this version (hurry up GBRoute Pro!) there is enough product supplied to quantify its comparatively low-cost. On the Professional version I would like to see a more comprehensive support for printer output included, options to calculate stopping, and highlights for motorway service stations (And what about a map to find Celtic Park? Ed.).

P.K.

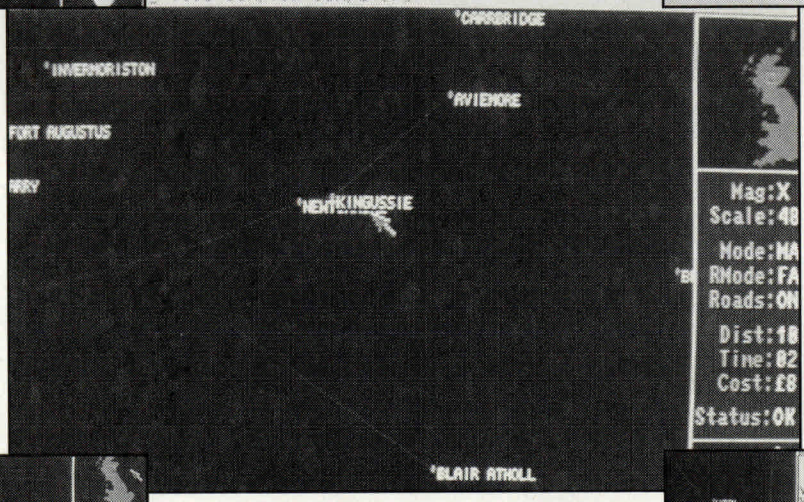
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Above: This is the full GBRoute map. All motorways and major A-roads are supported in this version.

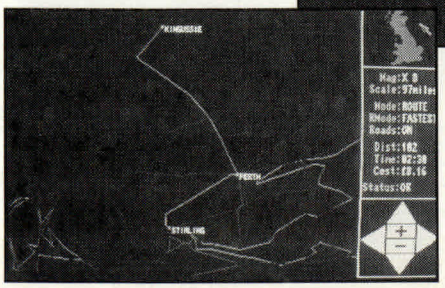


Above: The route display (shown here on screen) can be printed out to give a comprehensive route guide to accompany printed maps.

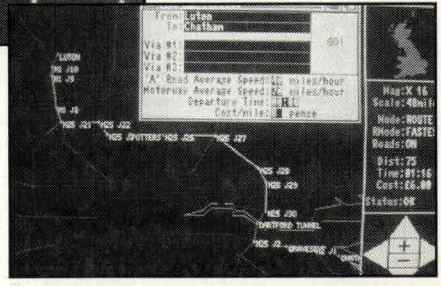


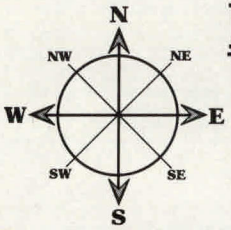
Below: Stirling to Kingussie via Perth: Away for the weekend on a skiing sortie, stopping in Perth for some munitions. The main map displays the route while information such as general location, distance, journey time, and cost are highlighted on the right.

Below: Luton to Chatham: A comprehensive route is displayed detailing road junction numbers and once printed out it offers more prominence to a chosen route than a road atlas.



Above: Using the controls on the bottom-right you can zoom in and out of the map to show local towns and roads. Only those supported on the database show up, but these are the main ones.





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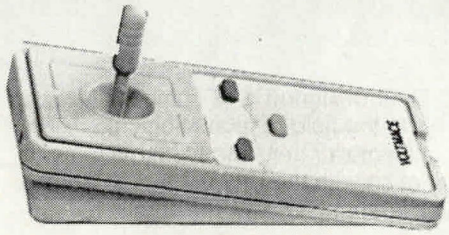
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Byte'n'Back

Backing up a hard disk? Mike Nelson finds a very useful utility...

If there is one thing you learn about using computers, it is that sooner or later they go wrong. As we become more dependent on their seemingly endless capacity to store data, the security of that information becomes of paramount importance. In addition to protecting the data from unauthorised access, the inevitability of a system failure must be considered in planning and using a computer setup which may range from a simple business machine to a multi-million pound installation. In any case, the principles of backing up files are the same, even if the mechanisms vary. Increasing numbers of Amiga users will possess a hard disk drive, and Commodore's own A590 is a popular choice, so how can you prevent a little hiccup in the works from ruining your day and losing all your files?

Byte'n'Back is the answer to all your problems as it greatly simplifies and speeds up the process of copying data from a hard disk to a series of floppies, and is then able to restore them to the hard drive when all is well again. There is nothing spectacular about this, you may say, because AmigaDOS is perfectly capable of doing just that, and anyone with a bit of rudimentary CLI knowledge can copy files from one device to another. Byte'n'Back has been recently upgraded to version 3.0 and is a pretty formidable package, so let us see the benefits afforded by using it.

Firstly, Byte'n'Back is entirely controlled by a nice Intuition screen so all of your commands are made by pointing and clicking with the mouse. The implementation of the user interface follows the standard approach of most Amiga software, so you will feel totally at ease with it, although I am a little surprised by the choice of low resolution mode for the screen.

The emphasis of Byte'n'Back is speed and control, so directories are kept in memory as much as possible (the program requires at least 1 Mb to work), and therefore access to files is almost instant with no annoying waiting around for read operations. Control is virtually absolute in that you can specify all the files you want to include in the backup, and so you do not have to waste time and disk space in copying unnecessary data around the place. Efficiency is further enhanced by using an alternative disk format to squeeze another 50K of data onto a disk normally capable of holding 880K. This in itself is a bonus point, but as Byte'n'Back cannot restore directly to floppy disks, I am a little concerned that if you back up a hard disk which subsequently gets dispatched to that great hardware heaven in the sky, you are left with a pile of disks which AmigaDOS doesn't want to know about, and which Byte'n'Back cannot put onto normally formatted disks. Theoretically, you could restore the files to the RAM: disk and then dump them onto floppies, but that is naturally limited by the available memory and is time consuming.

The process of making a backup starts with the selection screen which displays the directories of the source hard disk or its partitions. You can then select either individual files, or whole directories by using the gadgets on the left side of the screen. Pattern matching is a new inclusion which simplifies further the operation as you can effectively tell Byte'n'Back to go for all filenames with certain characteristics. Setting the pattern to "#?.doc", for example will include all the files ending with the suffix ".doc" regardless of what goes before the full stop.

Once all the selections are made, a glance at the information boxes will tell you exactly how may files and directories are to be copied, their total size in kilobytes, and most importantly how many floppy disks are going to be required. This information is constantly updated as you make your selections so you can see when to stop!

To start the read/write cycle you simply select the appropriate gadget, but first you must decide if you want the verify option to be activated. This checks the data being written to make sure it is safely stored on the floppy disk, and there is a time penalty for the extra security. If an error is detected, for instance because of a damaged disk, Byte'n'Back does not panic and give up like most programs, but merely asks for another disk. This feature is most welcome, particularly half way through a three hour major-league backup. Restoration of the data is simply a matter of reversing the process, and you can choose which files you want recalled.

There are a couple of other useful features of Byte'n'Back which are noteworthy. The first of these is report generation; the program keeps track of all the files it deals with in either restore or backup mode, and you can send this either to your printer or to a file for later perusal. You can also control the restore process so that files are not overwritten in the destination directory, and only new files are copied which saves time, and you don't have to worry about your most recent data being replaced with older information.

This is brings us onto the subject of speed and Byte'n'Back is very fast indeed, and although it runs under Workbench, multi-tasking is understandably out of the question for the most part. A straight copy with no verification takes about a minute per disk, and restoring the data takes 30 seconds longer than this. Byte'n'Back is able to use up to two floppy drives for its reading and writing and is theoretically limited to hard disk sizes of 300 Mb or less. I say limited with tongue firmly in cheek, as such a drive would take a massive 320 disks and 6 tedious hours of your life to do the writing. Personally, I would get a tape streamer, which, in theory at least, Byte'n'Back should support as an AmigaDOS device.

In conclusion, I would heartily recommend Byte'n'Back to anyone who owns a hard disk. For a relatively minimal outlay you are getting a useful program which does its job effectively and easily. The very nature of computer hardware and its inevitable failure rate means that one day Byte'n'Back will undoubtedly pay for itself many times over.

M.N.

Price: **£19.95**
Contact: **Bytes and Pieces, 37 Cecil St., Lytham, Lancs., FY8 5NN.**

One to watch...

Byte'N'Back was written by programmer, Ian Shaw. According to a proud Chris Wright, M.D. of Bytes & Pieces, Ian Shaw is not only just 17 years of age, but has been accepted for Cambridge University on the basis of - not of Byte'N'Back - but 7 A-Levels including 4 A's and 2 B's (what happened to the other?). Ian intends to start his own software company when he leaves Cambridge (after taking Computer Science). Not surprising . . .

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Manx's Aztec C Developer System

For Amiga users who are thinking about entering the world of C programming, Paul Overaa takes a look at the latest version of Manx Software's Aztec C Developer Package...

Manx Software Systems have been heavily involved with C compilers for over a decade and were one of the first companies to offer a reliable C development system for the Amiga.

There are two basic Amiga C packages available: The Professional System includes the Aztec shell, compiler, 68000 macro assembler, overlay linker, librarian, runtime libraries, profiler, WorkBench interface, Z editor, and the portable C library interface. The Developer System, which is the package we are reviewing, offers in addition a source level debugger and a complete set of Manx's 'Unitools'. Unitools is a 'productivity enhancement' package containing a number of program maintainence, source file comparison, pattern matching and text editing utilities.

Some products, such as the Source Level Debugger, are available separately and Manx even offer a Library Source package - this provides the original assembly language and C source code for the routines found in Aztec C's function libraries.

The Manx Aztec C Developer System now comes on five disks. The manual is large and is is fact five manuals bound into one - a user guide, the main reference manual, a massive library-function reference section, and the manuals which deal with the Unitools and the source level debugger.

As with most compiler documentation new users of Aztec C can be easily intimidated by the sheer volume of material present. It is as well therefore to remember that these manuals are essentially reference books - it is certainly not necessary to understand them completely before you start programming in C. Much of the information is given just for completeness and is of use only to the most serious of professional users.

The User guide documentation provides a general overview of the package and includes the, now traditional 'Hello World' tutorial. This takes the new user through the individual steps needed to create a simple short program which prints 'Hello World' at the CLI window. The manuals are well written and the early introductory material is particularly easy to follow.

In recent years the Aztec compiler packages have undergone a number of upgrades to provide both ANSI C compliance and various code/speed enhancements. There are math function libraries, UNIX and ANSI general functions, screen functions etc., plus of course a complete set of ANSI and Amiga header files. You can choose from small/large models for data and code generation so if, for instance, you wanted to generate 16 bit int and large data code with 68881 maths processor support you could do it with ease. In short - Aztec C is very flexible indeed!

One of the new additional features of the latest release is the use of 'environment variables'. These true Amiga system variables allow the user to set up default compiler options, set library and header file search paths, and define compiler-editor links. Another feature which is now standard is the ability to use pre-compiled header files to speed up the compilation process.

"Manx provide an enormous number of utilities with their compiler packages"

Amiga WorkBench routines are accessed dynamically through the resident library mechanism. Aztec C offers two alternatives here - conventional glue routines or the, much faster, direct generation of inline calls. It is, incidentally, also possible to create your own resident libraries and the Aztec package provides a number of files which contain the necessary structures/routines to simpify this, sometimes awkward, job.

Manx provide an enormous number of utilities with their compiler packages. As well as the big items like the assembler, librarian, Unitool programs and the source-code debugger there are things like the assembly language debugger, text archiving and dearchiving programs, and object-module/hex dumping programs.

As far as the Unitool utilities are concerned four programs are on offer:

Diff - *a utility which is designed to display the differences between two text files.*

Grep - *which is similar to the very powerful UNIX grep program. It can search for, and replace, identified patterns (characters, strings or groups of strings) within any specified set of files.*

Make - *another UNIX lookalike program which is used to create, and keep up-to-date, files that are created by other files, such as programs, libraries and archives.*

Z - *which is Aztec C's text editor similar to UNIX's Vi offering. It is a full screen editor which, once you are used to its command layout, is fast and efficient. Z includes an interface to Manx's QuikFix utility which can launch the editor directly from the compiler as compilation errors are encountered.*

Aztec C's source code debugger, sdb, is one of the systems high-power tools which allows you to debug programs at C source and assembly language levels. You can display function names, look at parameter values, examine variables, use function and line-by-line tracing, set breakpoints etc. It is even possible to see the actual C source as it executes. sdb is not just a great debugging tool it also comes in handy for learning about C and for looking around the system!

Last, but not least, we ought briefly to mention the function library (in practice one of the most important parts of any development environment). The Aztec function library is packed with a large number of prewritten (and well-tested) Aztec, ANSI and UNIX routines. The ANSI routines are particularly important because by using them it is possible to ensure high levels of code portability.

Last Words

Manx's Amiga Aztec C packages have been around for a long time now. They are stable, very well suported, and very well thought of. We have only just scratched the surface as far as the facilities are on offer are concerned. On the Amiga, there is a large Aztec user base and you will in fact find that much of the public domain source code which is floating around in the Amiga PD world has been developed using the Manx Aztec compiler.

The full Manx Aztec C Developer system costs around £200 in the UK. The smaller Professional Package is much cheaper, about £112. With the latter package you do admittedly miss out on the source code debugger (and a few other utilities), but nevertheless you still get an awful lot of high quality software for your money.

P.A.O.

Contact: Manx Software Systems
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Getting to know your computer

Microsoft Press (£2.99/$4.95)

This is a book for the complete beginner to personal computing. It assumes no prior knowledge, only that you have a PC to hand – or on your desk – and that you are, perhaps, finding the manual hard going.

'Getting To Know Your Computer' explains in very easy to understand terms what a PC consists of, the difference between hardware and software, the intricacies of the keyboard, how to operate software, how to boot up, and what DOS commands are, which could be very useful if you have acquired a bridgeboard for your Amiga. When you have practised and familiarised yourself with your PC and look on it as a friend rather than a taskmaster, it shows how to create, copy, list, change, rename and erase directories.

The book is lavishly illustrated. Each page has large, clear diagrams and drawings which complement the text. It reminds me rather of a 'Janet & John' book which, for those of you too young to remember, were very simple 'look and learn' volumes by which first grade kids used to learn to read.

To those of us for whom PC's are an everday fact of life and something we use as casually as we do a toothbrush, it may be hard to recall with what fear and trembling we first faced that blank screen and how, after someone switched the machine on for us, we wondered how long it would be before we pressed a button that would promptly make everything disappear and we'd lose some vital input.

Many people are still computer-shy, particularly older folk to whom a computer seems a complicated and sophisticated piece of equipment. Well, of course it is, but it's not as frightening as all that and I can almost guarantee that after reading and practising with this little book they will lose their irrational fear of the unknown and become as addicted as the rest of us.

Recently an eight-year-old of my acquaintance, who knows how to boot up and run his computer but to whom his PC is primarily just a games machine asked me, 'What happens when I put in a disk, how does what is on it get from there to the screen?' It's obvious that playing games has whetted his appetite and that now he's ready to learn more about his PC. I'm going to give him my copy of 'Getting To Know Your Computer'. It is an ideal introduction for the beginner – young or old – and at £2.99 (or $4.95 in the US) is one of the best buys around. ***D.M.***

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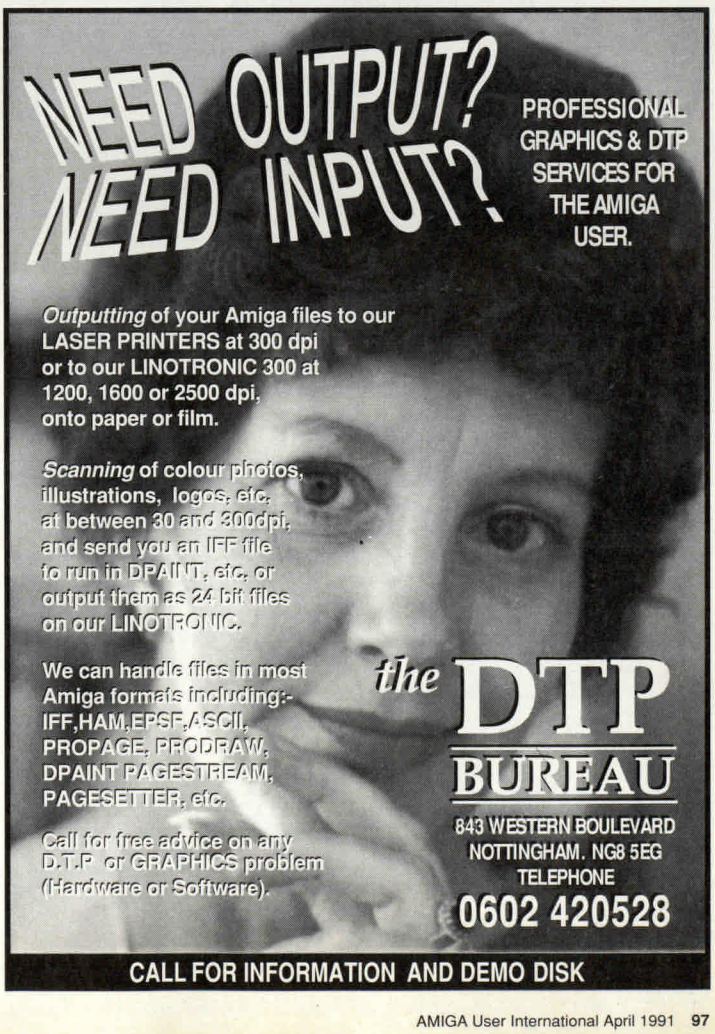
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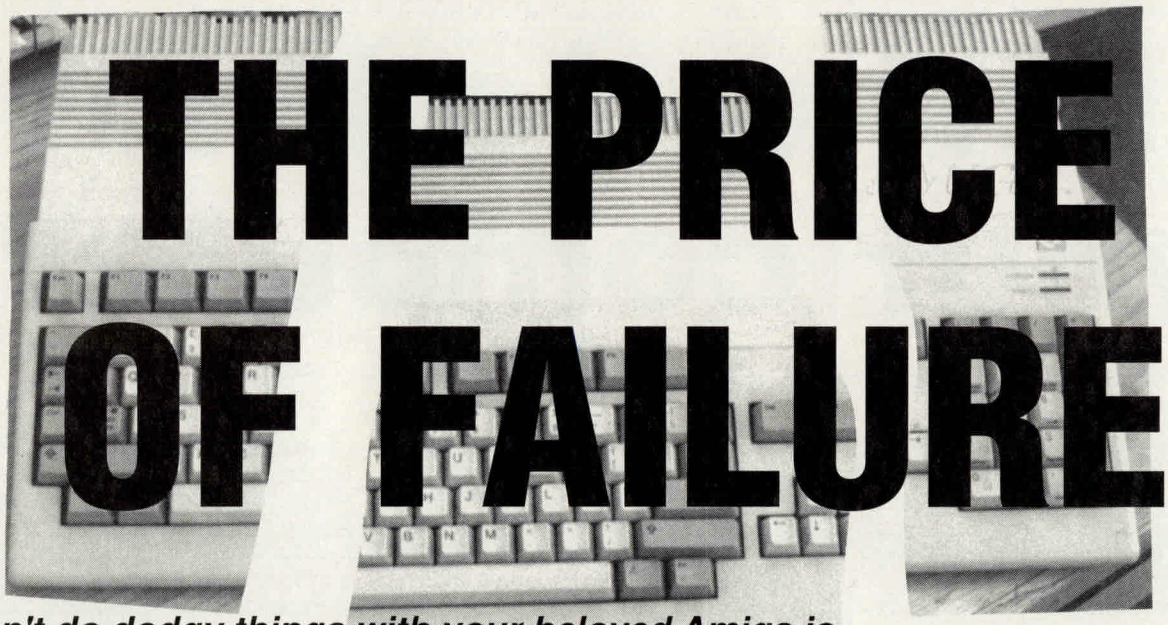
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THE PRICE OF FAILURE



Don't do dodgy things with your beloved Amiga is one moral of this John Kennedy story. There are other morals to . . .

Recently, my worst nightmare came true. I broke my Amiga.

I've never had a good track record repairing floppy drives, so I suppose I should have known better. I know I shouldn't have risked it, but I just can't help myself from plugging old floppy drives which I have "repaired" into my Amiga and expecting them to work.

The last time I did it was a week ago, and my Amiga decided enough was enough and exploded. I must admit that this took me by surprise, although deep-down I knew it was going to happen sooner or later.

After taking my beloved friend apart (not so tricky seeing as it's inside a Checkmate Digital A1500 and all the retaining screws have been lost!) it was not difficult to spot the problem. One of the CIA chips had blown its top, scattering black plastic debris all over the inside. Of course, the A1500 box means that I've no warranty, but as my Amiga is years old (a revision 5 relic) there wasn't much hope in that department anyway.

Luckily, a friend happened to be present and agreed on a CIA swap to check if this was the only problem. So, goodbye to his warranty and hello to a flatblade screwdriver and plenty of wincing, as we extracted his silicon.

We discovered that both the 'even' and the 'odd' CIAs needed replacing, but apart from that my Amiga was fine. "No problem", I thought. I felt sure I could get two new chips in about 24 hours. I Should be so lucky.

First I tried all the local electronics shops. None of them had never heard of the chip, and most of the said "Omega what?" when I told them what computer I had. Northern Ireland can be so depressing at times.

Time for some 'phone calling across the water. First on my list was ACE repairs of Cornwall. They wanted £16 per chip. Bit steep I thought. Only problem: They didn't have any in stock. Hmm. In that case they could charge whatever they liked.

Next call was to VIDEOVAULT. The good news, they had some in stock. The bad news was that they were asking £37.30 each. I just laughed at this price: in the advertisement I got their number from they were quoting an all-in- repair price of £49.95. In other words, if I didn't know what was wrong with my Amiga it would cost me fifty quid. On the other hand, because I did know what was wrong, it would cost me £75. Videovault also played the worst musak at me when I was waiting on their telephone extension.

AMPOWER of Warks (where or what is Warks? I thought it was a sub-atomic particle) were a lot more reasonable. No music and only £9.39 a chip. Only problem, none is stock.

WTS are another company quoting an interesting all-in repair price: £44.95. I got my sense of humour ready, and asked them for the price of the chips. Surprise: They only wanted £19.80 for them. 'Only' being ten pounds more than other outlets.

Last on the list was EMS of Petersborough. A very nice lady said that yes indeed, she did have some in stock and what's more she was only asking £9.31 for each one. "Done!" I shouted, and posted the cheque within half an hour.

The chips came this morning, exactly one week later, and within five minutes my dear friend was working again. Also in the post, in some form of sick joke, was an offer from Commodore to extend my warranty.

There is a moral to this story. In fact there are two morals. The first is not to stick dodgy disk drives into your machine and the second is to shop around for repairs. Although the chips all have the same source, how much they cost depends very much on the retailer.

J.K.

WTS Electronics advertise regularly in AUI and as we were a little surprised by John Kennedy's findings we contacted them to find out why the prices vary so much:

*WTS told **AUI** that they specialise in repairs and not in component sales. When they are asked to supply components they have to take into consideration their administration charges for the one-off request. The price they charge is also dependant on where they get supplies of the chip, and on the bulk of their order. The £44.95 all-in repair price is an average evaluation of what repairs cost. Some Amigas will cost more than this to repair, some less, but at the end of the day they balance out.*

The price quoted by EMS is also very competitve, and probably reflects that they are specialist component suppliers, and not repair specialists.

*Another factor to take into consideration is the turn-around time of the components. John Kennedy may have saved £10, but the chips did take a week to arrive and, of course, he had to fit them himself. However, this article prompts us to examine the whole area of repairs and we will cover this important matter in a near fture issue of **AUI**. If you have any complaints or praises to view on this matter please write in to our 'Write to Reply' pages.*

```
Amiga DOS
df1:Tut5.S
startlist       equ     38

;now the start of the main code
;all the code has been broken down into subroutines
;for ease of use. the main mouse wait is done
;via the btst.b #6,$bfe001.

        section program,code_c

start   move.l  execbase,a6
        jsr     forbid(a6)
        lea     custom,a5
        bsr     setsprites
        bsr     setpallete
        bsr     setupcopper
        bsr     setupscreen
        bsr     clearscreen

waitbutton      bsr     topofframe
        move.w  #$0600,color00(a5)
        bsr     flip
        bsr     clearcurrent
        move.w  #$0060,color00(a5)
        bsr     draw
        move.w  #$0006,color00(a5)
        bsr     delay
Line:  109 Col:    1 Mem:49727
```

Continued from page 45.

touched, and hence the illusion is created.

This idea is extended, and yet simplified, in the Amiga in that the interrupt is not normally intercepted by the 68000 because there is a specific "coprocessor" to do all the work for you. Called the "Copper", this circuitry is capable of waiting for the raster beam to hit a given point on screen, and then can alter almost any of the registers in the graphics hardware, by running a kind of miniature program known in the trade as a Copper list. The instruction set of the Copper is very limited, but adequate, given the power it has over the rest of the computer.

This Copper business goes a long way to explaining how the Screens of Intuition exist and can slide over each other, despite having totally different resolutions. If you look very closely at two overlapping screens, you will notice that at their intersection is a blank line, and if the pointer spans this, then it too has a gap in the middle. This occurs because the system is not geared to detecting the horizontal (X- axis) coordinate reliably, so rather than have a flickering interface (very nasty indeed), the display is simply turned off while the Copper list is being executed, and no-one really notices the deficit.

Sprites

Sprites are shapes which exist independently of the background and will be familiar to '64 users but not to ST people (!). Although used for the same purpose, they are alternatives to BOBs in that they possess their own resolution and colour schemes and are subject to different limitations (notably in size). The Intuition pointer is actually a sprite, and again there is DMA hardware to do all the controlling for you. The Copper can be programmed to re-use sprites, giving the impression of many more than the hardware-imposed limit of eight; and the operating system supports this fully via a complicated system of "Virtual Sprites" (VSprites to be exact).

Playfields

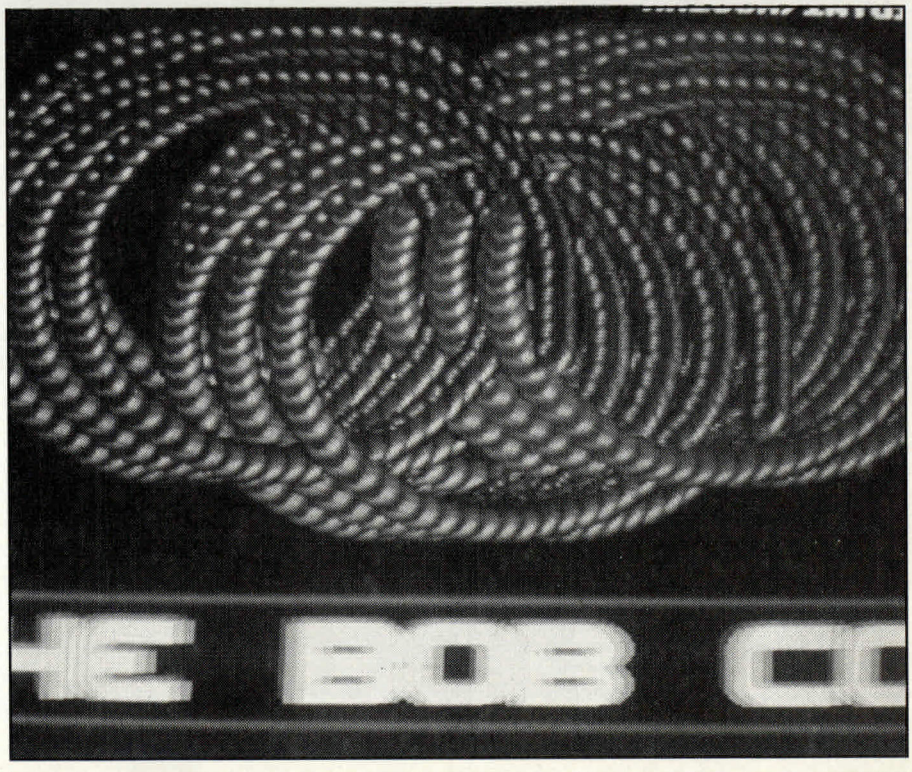
The many screen resolutions of the Amiga make it a master of disguise, and the cunning way in which the display is built up from bitplanes has been described in previous issues of ***AUI.*** The hardware for doing this uses a system called playfields, a term presumably dating back to the birth of the Amiga as a games console. It would take quite a brave programmer to dive straight in at this level, especially when the ROM is bristling with routines to help you set up a display, so we shall leave playfields for another day.

Memory

In previous articles, we have touched on the different sorts of RAM within the Amiga, mentioning the importance of CHIP memory. This is the area accessible by the custom chips and is limited to the lower 512K of the memory map (actually the lowest 1 Mb in newer 500s and 2000s and 2Mb in 3000s). There are important programming implications for this as expansion hardware may increase the memory available into the realms of FAST RAM, so called because the 68000 cannot be denied access by the blitter or Copper. If your program includes data specific for the custom chips (e.g. a sound sample or sprite images), you must ensure it is in the correct place, even if you have to copy it from FAST to CHIP memory.

It is impossible to give a comprehensive, detailed account of one of the most complex collections of silicon chips around, in a short article, but I hope to have given you some idea of the potential the Amiga has got. Having described the hardware, in future issues we shall be looking at ways of avoiding directly Poking around with it too much, getting the operating system to do the donkey work instead.

M.N.



commodore

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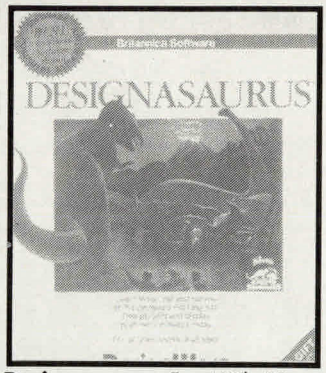
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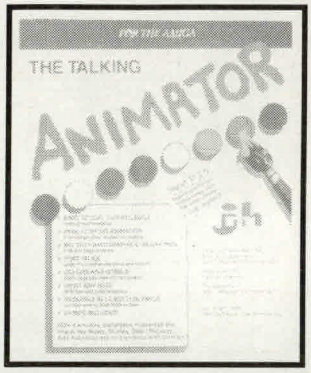
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INFOFILE

An Amiga database manager that organises sound, graphics, and information? Pat Kelly gets sorted out . . .

A database file is merely a stream of data and without a database/information manager is little short of useless. All database managers aspire to provide a similar function. They aid the creation of a database, and help sort its information into a controllable form. The manager sorts the data by rows (records) and columns (fields). Records are the primary index for the database and are made up of a number of fields which usually contain text information, such as name, address, phone no., and other relative information.

Where Infofile differs from its counterparts is that it not only stores text information but also music, graphics, and even tone-dialling information. Graphics and music are not saved directly. Alternatively the directory and filename of the graphic/



Full screen IFF graphics are displayed on a slideshow with accompanying soundtrack. Once the graphic/s have been displayed control returns to the Infofile editing mode.

sound file is entered into the database as a normal field entry and when accessed loaded and played, by Infofile. The files must be IFF compatible and can therefore be created from commercial packages - Deluxe Paint, DigiPaint, Master Sound, AudioMaster, etc., etc., etc..

Although some packages, including Superbase, have graphics mixed in with text information, Infofile's graphics are full-screen and do not integrate with the text. However, in "video" mode graphic fields can be displayed in a slideshow with accompanying sound playing simultaneously.

The tone dialling is an extra function which is more gimmicky than practicable, although some users may wish to use it. It works with the new telephones which use tone dialling. The telephone microphone is held up to the monitor/TV speaker and Infofile plays a dialling tone from the telephone number inserted in a "phone" field.

Infofile is supplied on two disks; a self-booting program disk, and a Template disk. Once the program is up-and-running there is relatively little space for large databases, even though graphics and

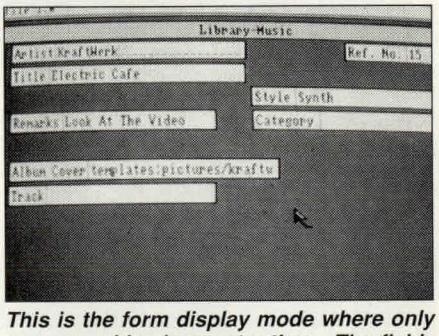
"Where Infofile differs from its counterparts is that it not only stores text information, but also music, graphics, and even tone-dialling information"

sound are not directly stored with the main data. The Templates disk, as the name suggests, is full of ready-created templates incorporating a variety of set-ups. These template databases have pre-entered records, and fields set-up ready to be altered to suit a particular need, or investigated for further understanding.

Altering an existing database is effortless, as is setting up an exclusive database from scratch. Using the pull-down menus, prompts and requesters, new columns (fields) and new rows (records) can be inserted.

An index field is normally set-up when creating a database and it is often difficult and labourious to index another field when required. Infofile's fields are not as restricted as most and each can become the index by clicking on its respective column. The index field (i.e. name, company, address, paid, etc.) can then be sorted alphanumerically from low-to-high, high-to-low, or certain records can be selected if respective comparisons are made. This is particulary useful when eliminating those people (records) who have "paid". By highlighting the field "paid" as index the relevant records can be "selected by: £5." Only those records which have paid less than £5 in the "paid" field can be accessed or modified until "select all" or "select by name" etc., is used.

Text fields can be imported and exported by Infofile. This function is useful for writing a standard letter to a number of people, but inserting their name, address and relevant details. This is known as mail-merging and is a common requirement for many business users. Not so common is a small text edit file which can be used to construct a small letter and directly use fields from the database. Some database managers support this useful function which allows the user to write a quick letter without having to exit the database, however, Infofile regrettably does not. This will not be a hindrance to owners of hard disk drives, who can pop in and out from a database manager to a wordprocessor. Even users with two drives can do this from Workbench, but those with a single disk drive may find it to be infuriating.



This is the form display mode where only one record is shown at a time. The fields can be dragged into any position and label-type printouts achieved.

Labels are output via a menu requester which can be set to print any combination of label configuration. It does not constrict the print area by setting boundaries so users with wide carriage printers can happily employ all of their printers capabilities.

Infofile is not THE definitive information manager. However, it is aimed at the starter-to-home market and is also competent enough to be used in business. The program will run on a 512Kb machine, but the packaging does, rightly, recommend 1Mb.

P.K.

Infofile is available along with Kindwords 2.0 and Maxiplan Plus in the POWER WORKS package.

Product: POWER WORKS
Price: £99.95
Contact: The Disc Company, 60 rue de Marcel Dassault, Boulogne 92100 France.
Tel: 33-149-109995

Infofile is also available in the Class Of The 90's software pack from Commodore.

Peggy, the MIDI Arpeggiator

Triangle Audio

Paul Overaa looks at a favourite Commodore C64/C128 music program that has now arrived on the Amiga...

Arpeggiation has always been a popular effect with modern musicians, and many older synthesizers had arpeggiators built in. Most newer synths have not included such effects and so Triangle Audio are hoping that their new Amiga version of Peggy is going to attract the growing band of Amiga-based musicians back into the arpeggiation fold.

What does it do? Peggy, when placed between say a MIDI keyboard and a MIDI-driven sound module, will take incoming note on/ off data and send out an arpeggiated version. Attack velocities are preserved allowing certain notes to be emphasized more than others. Multiple repeats are permitted with programmable transpositions, and the whole thing may be globally transposed. The arpeggiation tempo may be sync'd to a MIDI clock or set in absolute time and the amount of 'swing' in the time can be programmed.

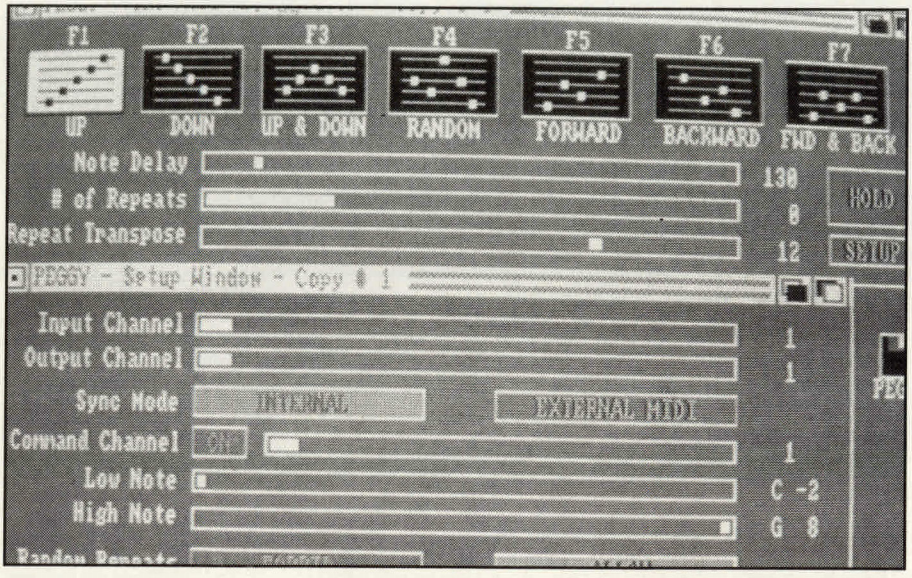
Peggy is the Amiga version of a program that has been around for some time on the Commodore C64/128. It is not a particularly attractive looking program by Amiga standards, but it does have a lot of useful functions...

There are separately assignable input, output and command channels, live MIDI control, notes can be latched (either by mouse or by using a sustain pedal) and program change commands can be used to switch arpeggiation modes. You can also save your favourite arpeggiation parameters to disk for easy setup later. One capability that is very important in practice is that the MIDI sync options allow you to synchronize the arpeggios to the output of a drum machine or sequencer.

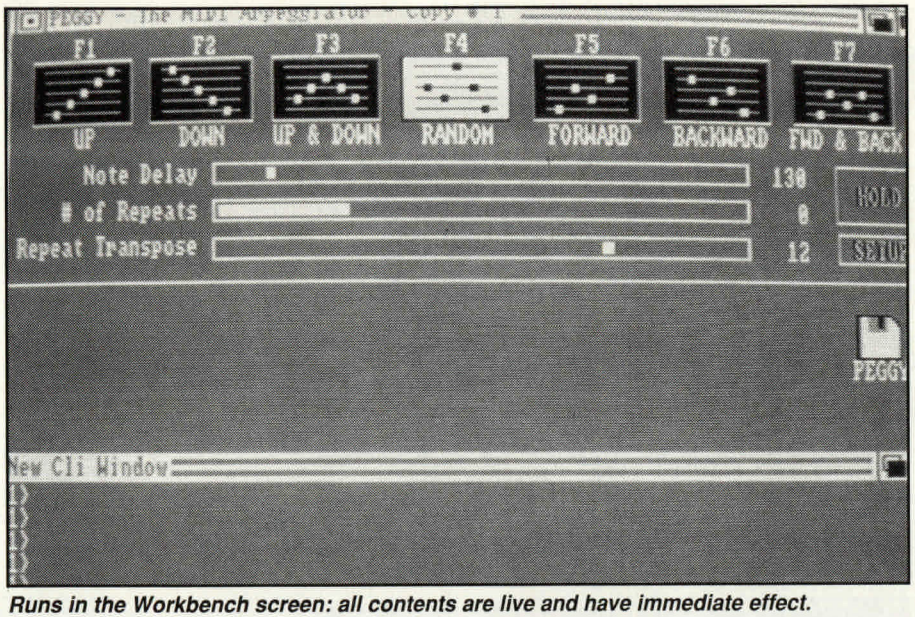
All controls in Peggy are live and have immediate effect. Some less often used controls are located on a separate setup screen which is accessed by clicking on the button marked 'Setup' at the right bottom of the main screen. Here three sliders set the input, output and command channels. Data will only be accepted from the input channel and will be re-channelized to the output channel before being sent out. The command channel determines which channel will be used for MIDI control of the Arpeggiator (only program changes are recognized). Additionally, the command channel can be enabled and disabled via the gadget immediately next to the left of the command channel slider.

"Attack velocities are preserved allowing certain notes to be emphasized more than others"

The only menu in Peggy is the Project menu. The Open option brings up a file requester to load a new set of arpeggiation parameters from disk. The Save option saves the current set of arpeggiation parameters to disk. Set Default saves the current parameters so they are loaded when Peggy is first run. Get Default reloads the initial parameters at any time. To quit the program you may either use Quit from the project menu, the close gadget or a keyboard shortcut. Several keyboard shortcuts are provided - Right-Amiga-Q will quit Peggy, Right-Amiga-O will open a file and Right-Amiga-S will save a file.



Allows fine control over many arpeggiation parameters.



Runs in the Workbench screen: all contents are live and have immediate effect.

ARPEGGIATION MODES

Peggy has seven types of arpeggiation available:

1. Up only - notes are arpeggiated from bottom to top.

2. Down only - notes are arpeggiated from top to bottom.

3. Up and Down - notes are arpeggiated from bottom to top and back down again.

4. Random - notes are played at random from those currently held down.

5. Forward - notes are played in the time order they were received in.

6. Backward - notes are played in the reverse time order that they were received .7. Forward and Backward - notes are played first in the time order that they were received in, and then in reverse order.

Peggy highlights the current mode icon. If no icon is highlighted, the Arpeggiator will pass MIDI data normally instead of arpeggiating it, but will still keep track of what notes are being played. To set the mode, click on the mode icon, touch the function key (f1-f7) corresponding to the arpeggiation mode desired or send Peggy the appropriate MIDI program change on the command channel set on the setup screen. MIDI Program Changes 1 thru 7 correspond to the modes shown above. Progam Change 8 will select a 'no arpeggiation' mode.

TRANSPOSITION

The amount of transposition between each repeat can be set to any number of semitones between -24 and +24 (two octaves up or down). In random mode you can get some interesting (though often non-musical) effects because the note and octave are both chosen randomly. The output of Peggy can also be globally transposed by up to +/- 5 octaves using the slider or keyboard to enter transpose values.

HI/LOW NOTE SETTINGS

By using Peggy's sliders or keyboard to set the high and low notes (anywhere from C2 to G8) it is possible to restrict the range of notes that the Arpeggiator will respond to. Any other notes will be passed on unchanged. This leads to some interesting ground because even though the Amiga only has one serial port Peggy can actually run multiple copies of itself (it uses the Pregnant Badger MIDI library which handles all the tricky merging operations). Having separate copies of Peggy handling different note areas in different ways opens up some interesting possibilities for arpeggiated harmony creation.

GETTING INTO THE SWING OF IT

A popular option on most drum machines is the ability to add swing to the tempo. This changes the timing so that two notes together still occupy the same amount of time, but one note is stretched a little and the other is shortened. You can do a similar thing with Peggy - swing settings are adjustable by slider or keyboard from 6% to 94% with 50% being even time. With settings less than 50%, the first note is shorter than the second and visa versa with settings greater than 50%. Small swing settings are a useful way of 'humanizing' Peggy's output.

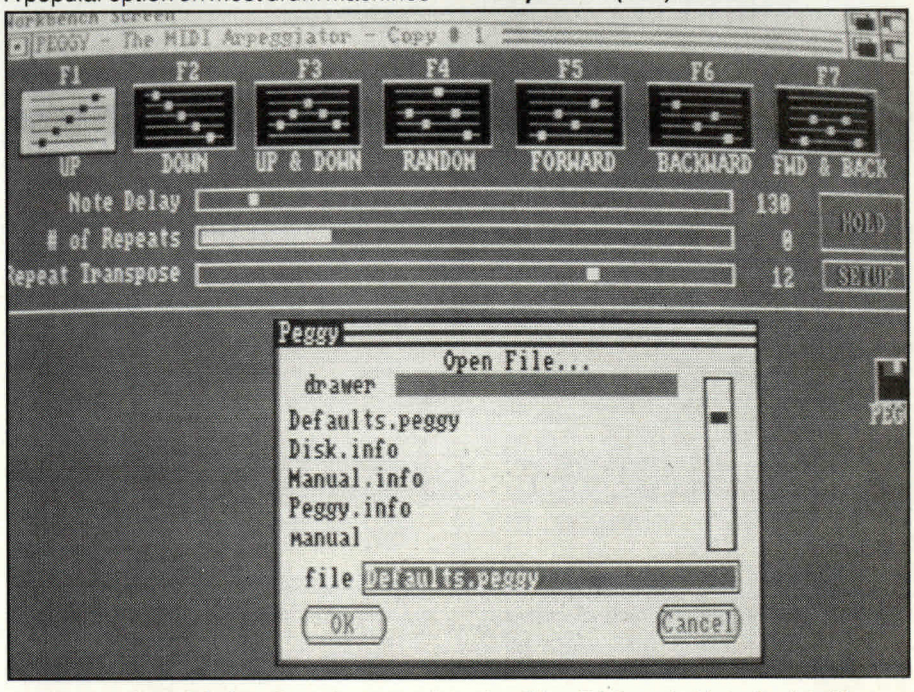
WILL IT SELL?

To be honest I don't know whether, given the current Amiga music climate, whether musicians are likely to rush out and buy this or not. An arpeggiator program may seem a bit 'old hat' to modern day MIDI users but nevertheless there are a lot of uses to which such a program can be put. You can, for instance, play or latch the notes of the current scale in one of the lower octaves and use Peggy to generate walking bass lines.

As I said earlier, this program will win no prizes for appearances but that's unlikely to matter to the musicians who are likely to buy it. Within it's rather specialized applications area Peggy does a useful job. Price-wise it's not too bad either. At the moment the Program is only available directly from Triangle in the USA. The cost? $50.00 plus $2.50 Postage/Handling ($5.00 for European orders).

P.A.O.

Contact:
TRIANGLE AUDIO
P.O. Box 1108
Sterling, Va. 22170 USA
Telephone: (301) 526-6224



Despite a rather plain interface the arpeggiator is still well integrated into the Intuition environment.

The Amiga With Bells And Whistles

How do you get expensive equipment asks Mervyn Rosenberg of a college. 'Write a cheque' he is told. For the rest of usimpecunious Amiga users, he has another more inviting suggestion. . .

Well, I got the extra 512K and the external 3½" floppy. The latter is, of course, a lot stiffer than a 5¼" which really is floppy and nothing like a hard disk the hardness of which has to be taken on trust as you can't take out and hold it in your hand just like that.

Anyway, with all this expensive power am I satisfied? Of course not. No computer owner/user (or any other hobbyist) ever is.

For that matter, I've never yet met a surgeon who wouldn't like some more instruments or who hasn't just had a brilliant idea for something new which would make old things easier or new things possible.

Being a surgeon in the dear old National Health Service for thirty years taught me to get by with what I've got. Before we had the current governments 'cuts', we had the previous government's restrictions and the constraints, or whatever, of those in power before them.

In 1969 I visited a colleague in practice in West Berlin, as it then was. He had a new set on instruments in his private clinic the like of which the might of the London teaching hospital, in which I was then working, couldn't afford. Naively I asked him how he paid for these and, in his thick German accent, he replied, "I write a cheque."

I must confess that the doubled memory of the Amiga and the wonderful easing of my disk-swapping life given by the external drive make life without them impossible to contemplate. It is obvious that the 500 was designed to have both and that without them it is just a toy – and an irritating toy at that.

With them I can use not only KindWords but its Desk Top Publishing accompaniment, PageSetter, with all its fonts. Unfortunately this merely exposes one to the desire for a more powerful DTP which would require – you guessed it – more memory and a hard disk!

The other thought which crosses the mind, once the seeds of desire for new software have been planted, is the possibility of PC compatibility.

Until recently, with just 'Transformer' to warm your cold bones, this was just a silly dream but, if both advertisements and review articles (including one in this, the totally reliable ***AUI***, by Jonathan Living, December 1990 issue) are to be believed, the newly marketed KCS Power PC Board makes PC compatibility both practical and, God help me, immensely desirable.

The problem, as with most computer hard and software, is that we poor ordinary punters quite reasonably, would like to try things out before we buy them. The market is set up so that the only way to try it out is to buy it.

What that means is that we buy less than we otherwise would and get frustrated or buy things we otherwise wouldn't and get disappointed (and poorer).

The only means we have of consumer input is in the form of magazines and user groups. The trouble is that, no matter how much we trust our advisers, we would still like to try things out for ourselves.

The only suggestion I have is for some entrepreneur to start a club which could purchase samples and pay for them by renting them out to its members. Discounts could be negotiated with the producers and a vast new business could make a multitude of users happy. If nobody thins it is a profitable venture, the idea could be taken up by one of the user groups and they could widen their usefulness.

Of course the problem of software theft remains but the average punter is pretty honest and the determined commercial thief is almost unstoppable anyway. For the trial of hardware this problem doesn't arise.

If ***AUI*** or anyone out there thinks this is a commercial possibility, just remember that I thought of it first. With my luck there'll be someone out there doing it already. If there is – why haven't you advertised your services?

To return to PC compatibility, the KCS board is specifically IBM XT compatible, and as the main purpose of having compatibility is to make use of the vast range of extra software which would then be available to you, this must be at the front of your mind when considering purchase.

If you are a one computer user or owner and that computer is an Amiga you will then have more temptation to drive you wild. The range of business software for the XT is staggering so that the next problem will again be choice and the desire to try it out. The argument is, as ever, circular.

If you use a PC at work then, with software and data portability, you will be able to take your work home to your Amiga and never have any free time at all – but if you are a true computer buff, what's free time for anyway?

M.R.

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PHOTOCOPIES OF THIS COUPON WELCOMED!



AUI-SPELL part 3 – The Code

Paul Overaa provides the code to supplement last month's tree-building description

Now that the mechanics of building a tree have been dealt you will appreciate the purpose of the left and right descendant fields in my word descriptors. Ignoring (for the moment) the case of building the very first node, the node-creation code is going to have to compare a new node entry with any number of existing nodes present on the tree. I have written a 68000 routine called COMPARE_WORDS that takes references to two descriptors and returns -1, 0 or +1 depending on whether the new word is less than, equal to, or greater than some other node being examined. For obvious reasons nodes do not need to be created for words which are duplicates of other entries on the sort tree. I have also rewritten the assembler code so that it now handles the creation of the descriptors.

The allocation of descriptor memory should ideally only be done when it is certain that a node is to be created but such an approach carries the speed penalty incurred by a large number of small memory allocation calls.

To eliminate this overhead, I am going to deliberately commit two cardinal computing sins: Firstly, the text file will be scanned using a routine (based on last month's patch) to count the number of words present. Secondly, since the word count tells us the maximum number of descriptors which might be required, I am going to allocate the descriptor space for every word in the file in advance. What are the sins involved? Reading the same data twice and allocating more descriptor memory than would probably be necessary. The advantages in practice? Speed (despite the double read) and initial simplicity.

The C code which is being used to test the assembler patch has been modified to include a TreeNode structure that mirrors my assembly language representation of a descriptor. This enables me to write C code which can use the descriptors set built by the assembly language routine. A short loop has been included which scans the descriptors created and prints the corresponding words at the CLI. This time the output should not (and did not) not include duplicates because only one node will have been created for any particular word - no matter how many times it occurs in the text file. This month's code again makes another quite useful utility, but the real benefit (and the real reason why it was written) is that it has enabled us to check that the descriptors were being properly formed. It was a necessary prerequisite to starting work on fully fledged tree searching routines. I had to be sure that such routines were going to be given valid descriptor data !

I should mention that all of these routines (C and assembler) have been designed using Warnier diagrams. For the next few instalments there just isn't going to be enough space to deal with this technique - I will however try to deal briefly with this topic in later instalments because it is very powerful.

To finish with this month here is the revised code sections. Firstly the C code..

```
/*
================================================================================
*/
/* EXTRACT WORDS: Word separator - uses the new 'node orientated' patch   */
/*                                                                        */
/* Programmer:   Paul Overaa                                              */
/*                                                                        */
/* Date:         30th Nov 90                                              */
/* ---------------------------------------------------------------------- */
/* Note: The program just provides an unsorted, duplicate-free, list of
/* words. Use from the CLI like this...  extract_words <filename)       */
/* ---------------------------------------------------------------------- */
#define  FIB_SIZE          (LONG) (sizeof(struct FileInfoBlock))
#include <exec/types.h>
#include <exec/memory.h>
#include <libraries/dos.h>
struct TreeNode {
      ULONG count; /* number of characters in word */
      TEXT  *word; /* pointer to word */
      struct TreeNode *left_descendant;
      struct TreeNode *right_descendant;
};
ULONG  g_filesize, g_word_count;
TEXT *g_buffer_p;
void *g_node_memory_p;
main(int argc, char *argv[])
{
BOOL error_flag=TRUE; /* guilty until proven innocent approach */
struct FileHandle *fh, *Open();
struct FileLock *filelock_p;
struct FileInfoBlock *fib_p;
struct TreeNode *node_p;
if(argc=2)
     { /* user has given a filename so first check to see if it exists */
  if (filelock_p=(struct FileLock *)Lock(argv[1],ACCESS_READ))
  {
    if(fib_p=(struct FileInfoBlock *)AllocMem(FIB_SIZE,MEMF_PUBLIC))
{
   if(Examine(filelock_p,fib_p))
   {
    g_filesize=fib_p->fib_Size; /* now we know how big the file is */
    if(g_buffer_p=(TEXT *)AllocMem(g_filesize,MEMF_PUBLIC))
     {
      if((fh=Open(argv[1], MODE_OLDFILE))!=NULL)
        {
         error_flag=FALSE; /* clear... everything worked O.K. */
         g_filesize=Read(fh,g_buffer_p,g_filesize);
         Close(fh);
         WordCount(); /* preliminary scan to count max words */
                                    if  (g_node_memory_p=(void
*)AllocMem((g_word_count+1)*16,MEMF_CLEAR))
           {                        node_p=(struct TreeNode *)g_node_memory_p;
             SeparateWords(); /* build tree descriptor */
                do {
              node_p++;
                   printf("word = %.*s \n",node_p->count ,node_p->word);
}while((node_p->left_descendant)||(node_p->right_descendant));
             FreeMem(g_node_memory_p, (g_word_count+1)*16);
           }
        }
      FreeMem(g_buffer_p, g_filesize);
     } /* end of if AllocMem() for buffer */
    } /* end of if Examine() */
   FreeMem(fib_p,FIB_SIZE);
   } /* end of if (fib_p */
  UnLock(filelock_p);
  } /* end of if (filelock */
 } /* end of if(argc=2) */
 if (error_flag) {printf("sorry - cannot get details of this file\n");}
}/* end of main() */
/                                                                        *
================================================================================
*/
```

And here is the assembly language patch that handles the descriptor preparation...

```
        opt L+
        NOLIST
      incdir "df0:include/"
       include exec/exec_lib.i
       include libraries/dos_lib.i
       LIST
*
*
*                    MODIFIED TEST PATCH                    *
*
* Assembler patch which scans an ASCII file picking off words (defined  *
* as letters a-z or A-Z delimited by ANY other characters) building     *
* the binary tree descriptors as it goes.                               *
*
* a0   temporary (scratch) use in COMPARE_WORDS
* a1   temporary (scratch) use in COMPARE_WORDS
* a2   is loaded with the address of the start of the buffer
* a3   permanently holds base address of NewWordNode
* a4   holds base addresses of existing nodes
* a5   points to the base of the next available node space
* a6   used by system call macros
* d0   temporary (scratch) use in COMPARE_WORDS
* d1   temporary (scratch) use in COMPARE_WORDS and WRITE_WORD
* d2   is used by Dos call based WRITE_WORD to hold word start
* d3   is used by Dos call based WRITE_WORD to hold character count
* d4   is used as a character offset counter in COMPARE_WORDS
* d5   is loaded with the total number of characters in the file
* d6   UNUSED
* d7   UNUSED
       XDEF    _SeparateWords
       XREF    _DOSBase
       XREF    _g_buffer_p
       XREF    _g_filesize
       XREF    _g_node_memory_p
lowercase_z   equ   $7A
lowercase_a   equ   $61
uppercase_z   equ   $5A
uppercase_a   equ   $41
*
_SeparateWords      movem.l a2-a6/d2-d7,-(sp)     preserve
                    CALLDOS Output                DOS already open
                    move.l  d0,OutputHandle       Get output handle
                    move.l  _g_buffer_p,a2        buffer start
                    move.l  #NewWordNode,a3       load base address
                    move.l  _g_node_memory_p,a5   root of tree
                    adda.l  #16,a5                1st 'real' node
                    move.l  _g_filesize,d5        characters in file
*
      FINDSTART           cmpi.b  #lowercase_z,(a2)     is char a-z ?
                    bhi     NOTLOWERCASE
                    cmpi.b  #lowercase_a,(a2)
                    bcs     NOTLOWERCASE
                    bra     START_FOUND           now look for end
NOTLOWERCASE        cmpi.b  #uppercase_z,(a2)     is char A-Z ?
                    bhi     NOTLETTER
                    cmpi.b  #uppercase_a,(a2)
                    bcs     NOTLETTER
                    bra     START_FOUND           now look for end
NOTLETTER           addq.l  #1,a2                 point to next character
                    subq.l  #1,d5                 decrease characters left count
                    bne     FINDSTART             and see if that's the word start
                    bra     FINISH
START_FOUND         move.l  a2,4(a3)              put start of word in NewWordNode
                    move.l  #1,(a3)               and initialize it's character count
 FINDEND            addq.l  #1,a2                 point to next character
                    subq.l  #1,d5                 decrease characters left count
                    beq     FINISH                end of file found so quit
                    cmpi.b  #lowercase_z,(a2)     is char a-z ?
                    bhi     NOTLOWERCASE2
                    cmpi.b  #lowercase_a,(a2)
                    bcs     NOTLOWERCASE2
                    addq.l  #1,NewWordNode        increment 32 bit character count
                    bra     FINDEND
NOTLOWERCASE2       cmpi.b  #uppercase_z,(a2)     is char A-Z ?
                    bhi     NOTLETTER2
                    cmpi.b  #uppercase_a,(a2)
                    bcs     NOTLETTER2
                    addq.l  #1,NewWordNode        increment character count
                    bra     FINDEND
NOTLETTER2          jsr     ADD_WORD              add word to tree
                    addq.l  #1,a2                 move to next character
                    subq.l  #1,d5                 decrease characters left
                    bne     FINDSTART             look for more words
*
FINISH              movem.l (sp)+,a2-a6/d2-d7     restore
                    rts                           back to C
*
*
*                    ADD WORD TO TREE                       *
*
*
*
ADD_WORD            move.l  _g_node_memory_p,a4   root of tree
AW1                   jsr     COMPARE_WORDS
                    bne     AW2
                    rts                           ignore new word
AW2                   bpl     GREATER_THAN
LESS_THAN             cmpi.l  #0,8(a4)
                    beq     MAKE_LEFT
                    move.l  8(a4),a4              move to left
                    bra     AW1
MAKE_LEFT           move.l  (a3),(a5)             copy count
                    move.l  4(a3),4(a5)           copy start of word
                    move.l  a5,8(a4)              define new left desc.
                    adda.l  #16,a5                set a5 to next empty node
                    rts
GREATER_THAN        cmpi.l  #0,12(a4)
                    beq     MAKE_RIGHT
                    move.l  12(a4),a4             move to right
                    bra     AW1
MAKE_RIGHT          move.l  (a3),(a5)             copy count
                    move.l  4(a3),4(a5)           copy start of word
                    move.l  a5,12(a4)             define new right desc.
                    adda.l  #16,a5                set a5 to next empty node
                    rts
*
*
* temporary debug routine - loads word from a4 Node and prints to CLI
WRITE_A4_WORD       move.l  (a4),d3               new word count in d3
                    move.l  4(a4),d2              word start in d2
                    move.l  OutputHandle,d1       reset standard out
                    CALLDOS Write                 output the word
                    move.l  OutputHandle,d1       reset standard  out
                    move.l  #LF,d2                start of LF string
                    moveq   #1,d3                 1 char only
                    CALLDOS Write                 send LF character
                    rts
*
*
*                    COMPARE WORDS                          *
*
* Given nodes N1 and N2 routine will return the following codes in d0   *
*     -1  if N1 < N2    :    0  if N1 = N2    :    +1  if N1 > N2      *
* Don't re-test d0... Just make use of the flags that have been set     *
*
COMPARE_WORDS       moveq.l #0,d4
CW1                   cmp.l   (a3),d4             is d4 < N1 count ?
                    bcs     CW3                   YES if branch taken
                    cmp.l   (a4),d4               is d4 < N2 count ?
                    bcs     CW2                   YES if branch taken
                    moveq.l #0,d0                 N1 = N2
                    rts
CW2                   moveq.l #-1,d0              N1 < N2
                    rts
*
CW3                   cmp.l   (a4),d4             is d4 < N2 count ?
                    bcs     CW4                   YES if branch taken
                    moveq.l #1,d0                 N1 > N2
                    rts
*
CW4                   move.l  4(a3),a0            N1 string start in a0
                    move.l  4(a4),a1              N2 string start in a1
                    move.b  0(a0,d4),d0           i'th char of N1 string
                    move.b  0(a1,d4),d1           i'th char of N2 string
                    ori.b   #$20,d0
                    ori.b   #$20,d1
                    cmp.b   d0,d1                 is d1 >= d0 ?
                    bcc     CW5                   YES if branch taken
                    moveq.l #1,d0                 d1<d0 so  N1>N2
                    rts
*
* We know that either d1>d0 or d1=d0
CW5                   beq     CW6
                    moveq.l #-1,d0                d1>d0 so N1<N2
                    rts
CW6                   addq.l  #1,d4
                    bra     CW1
*
*
NewWordNode         ds.l    16                    16 bytes
LF                dc.b    10                    just a LINEFEED
OutputHandle        dc.l    0
*
*
```

to be continued...

P.A.O.

Amiga Answers

Andy Eskelson searches out the answers to your tough technical questions

Dear *AUI*

I am the proud owner of an Amiga 500 with 1.2 Kickstart and I have been an owner for about 2.5 years now. I am also another dedicated reader of the monthly issues of ***AUI***. I am very interested in several of your columns including Test Drive and Amiga Answers. Since in the past Amiga Answers have helped me, I hope you could help me now.

I have a basic A500 with IMbyt and an external disk drive, and I wish to upgrade my system for a expandable system like the B2000 as I require power and large quantities of RAM, about 5 – 8 Megs. This is the be used for graphics written in machine language.

I wish to upgrade for an B2000 but I would like to keep my Workbench 1.2 and Kickstart 1.2 as I have a large quantity of software not compatible with Kickstart 1.3. or better still, is it possible for me to remove the kickstart ROM from the main circuit board and part-exchange it with an replacement? As I am a technical minded person, could you give me the position of the ROM and the reference number of the Chip?

Because the B2000 is fitted with the 1.3 kickstart, is it possible for me to purchase some sort of PCB which allows me to exchange kickstarts, without dismantling the machine each time?.

Why don't Commodore make the internal disk drive quieter as it is very noisy with a dreadful clicking noise? Why don't they have an electronic ejection of the disk drive like those of a Apple Mac. Finally I thought that shareware was supposed to be free, because a large number of shops and mail order companies sell a single PD disk for about £2-£3 surely good quality disks don't cost over £1.50 !!

Could the A 500 have the same expandability as the B2000 one day?

I would be extremely grateful if you could answer these questions.

Stephen Lee,
Manchester

Dear Stephen,

Sorry to hear that you have a lot of software that will not work under 1.3.. I do find that rather strange it might be worth rechecking on that point.

Kickstart is in chip U2, sorry I can't help on part numbers, as they do tend to change a bit. I would not worry however as there is a very much better solution to this problem. There is a device that will switch kickstarts for you. I will add a word of warning, and that is things like the hard disk and the fast file system can get VERY confused if you constantly swap kickstarts. Make dammed sure that you keep up-to-date backups of everything you do!

Amiga Direct (081-891 6704) sell a kickstart card with a choice of 1.2 or 1.3 give them a call and discuss the matter with them.

Commodore do NOT make quiet disk drives, I have two - the CBM type is a bit clunky, but the other (NEC) is very very quiet. If you do not like the clicking, which is the system checking for a disk, there are a couple of utilities available normally called NOCLICK or something like that, that will cure that problem. There are also several hardware devices that will do the same, or you could resort to the best cure of all, and that's the one that I use ... stick a disk in the drive! Seriously though, if you do get a B2000 the fan noise will mask most of the clicks anyway, and add a hard disk... well, the noise goes up.

Electronic disk eject is a gimmick. If it is so good why is there a small hole into which you can poke a paperclip to unjam the disk? I think that it is rather unnecessary to have electronic eject, give me a manual system any day, that's much more reliable.

Your comments on shareware have been discussed many times, so in a nutshell....

Shareware is NOT free, you should pay the author for his program if you use it. You are referring to the PD distribution companies. Well, some companies do more than others. The cost of 3.5 inch disks is about 35p in bulk so that is not a large overhead. The copying takes time and there are large overheads to pay, like wages and rent, so a small surcharge is to be expected. If you do not like the charges, don't use the company concerned!. User groups like ICPUG have most of the PD disks available and do not charge for disk copying. You send them a few disks (there is a limit to how many you can request at one time) and the return post and package labels and ICPUG will send you the disks.

The A500 is almost as expandable as the B2000 already, at a price. Why not have a look at the Checkmate expansion system?

Dear *AUI,*

A few months ago at the age of 60 I obtained a second hand Amiga 500 expanded to 1 meg and fitted with a 2nd drive, all with the view to producing Video titles.

However there was included with the Amiga a copy of The Works which may or may not be a pirate copy, but no instructions on its use. Curiosity being what it is I played with the program until I had sufficient information to work spreadsheet and organiser files.

Now comes the problem. Having made almost two thousand entries to a music collection file I opened the file to add more entries, only to be prompted that there was a disk error and to use disk doctor. Having done so I am left with a disk which has a directory but no organiser icon, and no way in which I can access the information which is in the directory.

All attempts to use DOS commands such as copy or run are met with various wordings which all indicate that the disk is not accessible.

Is there any way to recover this work or shall I be forced to terminate the whole thing?

Tony Dunn,
Bucks.

Dear Tony,

You may have a pirate program, Is the disk a copy ie a standard label or does it have the company label The Works by MSS?. The works consists of three packages, Scribble!, Analyze!, and Organize!, In fact I am using The Works! to type up the readers letters!. All are fairly basic programs by today's standards, but you can do some very clever things with the database and spreadsheet. The manuals are about an inch thick for the spreadsheet and about half an inch for the database.

If you intend to use this program go and buy a proper set, as it is so old now, you should be able to pick up a copy for about £50 or so and be legal!.

Looking at your directory, (I wish you have told me which file you stored your data in!) if your data is in TUNES.DBF then it looks as if it is all there. What you need to do is to create a new master disk from your backups, and then it should be possible to copy the tune files onto the new disk. Use the format COPY from DFO:T#?.#? to DFI: that will get all of the tune files over to the new disk. If you still have problems, then I suggest that you try writing a short basic program to open the .dbf file and read the file character by character, and send it to another file. Once that is done you can possibly recreate most of you data.

Your problem was probably caused by taking the disk out of the drive before the LED had gone out. Sometimes there will be a little bit of disk access after the main save is done, so always give the disk a few extra seconds to finish up whatever it is doing.

Dear *AUI,*

Like many other A500 owners I took the opportunity of upgrading my system to a B2000 last summer, since when conflicts with existing third party peripherals have plagued me. It has proven exceptionally difficult, if not impossible to arrive at the truth behind the problem, so I'm addressing this letter partly to Commodore UK and

partly to others, like myself, who may be suffering similar problems.

Firstly can Commodore UK confirm whether or not true PAL is available from the parallel slot on the latest rev 6 B2000 and is the latest revision bug ridden?

Can Commodore UK confirm or deny the rumour that they are not following their own hardware specifications leading to timing/DMA problems on the latest B2000

I ask these questions as the disgruntled owner of an expensive peripheral that worked perfectly well with my old vers 1.2 Amiga A500 but not with the rev 6 B2000. The peripheral, a Burocare VD3+ colour digitiser, has been rendered useless on my new machine and given that it cost in excess of £800, I am eager to discover who is to blame, either Commodore UK or Burocare. If the former then I assume other purchasers of the latest B2000 and presumably the A1500, will be suffering from similar peripheral failures. At least, with those peripherals that depend on timing and DMA access such as some digitisers and genlocks. If this is the case then expandability (which is surely the main impetus to upgrade from an A500) becomes an irrelevance; it would be better to stick with the A500. Future expansion becomes a source of contention, will True-Colour or accelerator cards, other genlocks and digitisers, even NewTeks Video Toaster (if and when a PAL version becomes available) work with the rev 6 B2000. If Commodore are to blame then I surely hope that they will rectify the matter at negligible expense to myself and others in a similar situation.

If Burocare are responsible then I hold no hope whatsoever of a satisfactory conclusion to my problem. It seems that the company went into receivership in Aug of 1989 and while they continue to trade under the same name (even under the same logo), from the same address and in the same business they deny any responsibility in the matter whatsoever. I assume their stand is stringently legal, in all but the spirit of the law. A warning to others perhaps of dealing with any hard or software manufacturer and a tidy legal loophole through which they may slip in times of trouble.

I am very begrudgingly resigned to losing out, as often seems the lot of the customer whenever they have to deal with retailers, manufacturers and authors of computer equipment. Even so it is very frustrating not to know to whom I can point the blame. I hope that this letter, should you chose to publish it, will provide me with an answer.

Keith Savage,
Ilford

Dear Keith,

There are some timing problems with some rev 6 B2000 machines. These were sorted out very quickly, and the latest is Rev 6.2. You should find a small sticker on the motherboard to this effect. The Rev 6 and 6.2 are the same motherboard, but some rework was done, (about a dozen modifications) to cure the timing problems.

The timing problems were not very severe, they were just on the specification limits, and were causing some problems. It was discovered when some CBM cards did not work correctly. What had happened was that the cards had drifted to one end of the specification and the motherboard to the other. That is what the modifications corrected.

It is a little unfair the blame CBM or a manufacturer for incompatibility problems, however I do take your point, and it should be stated exactly what a system requires in order for it to run correctly.

One thing that could be the problem and that is the version of Workbench that you are using. Try booting your B2000 with the old WB 1.2 rather than the WB 1.3. I have a couple of programs that do not like WB 1.3 at all, you might be lucky.

No home computer puts out TRUE PAL, they all make compromises, but generally unless you are trying to interface into a professional video editing suite the compromises will make very little difference.

As the digitiser connects into the parallel, it is very doubtful if DMA is causing a problem, the parallel port is connected via an I/O chip that is read by software. It sounds as if it is the software that is upset rather than the hardware.

You might like to try the NoFastMem program as well, but unless Burocare get their act together you don't stand much chance of getting things sorted out. Such an attitude from any company regardless of their business situation is deplorable.

I do hope that you get somewhere with this problem, and are able to use your equipment again in the near future.

Dear *AUI,*

I own an Amiga 500 with a half meg expansion and have it linked to a Casio CT670 keyboard with a MIDI interface. I have been using Aegus Sonix V2.0 for quite a while now but would like to take music more seriously and so get some better and more powerful software. The two I have in mind were Deluxe Music construction set and Music X. I have had a demo of DMCS and find it easy to use but with no great difference to Sonix. Everywhere I look I see and am told that Music X is the best. Unfortunately I can't get a demo of it, can't see all its powerful features and so don't know which one to chose

Stephen Posnett
Co. Armagh

Dear Stephen,

I have not printed your list of questions regarding Music X for a very good reason, There is no way that Amiga Answers can do justice to Music X or yourself as it is, as you quite rightly say a very powerful package.

There have been many articles published in AUI on Midi, so have a look through your back issues.

Dr T May 1990,
Nov 90 Bars and Pipes Mar 90
Music X file structure Dec 89
Master Dec 89
Music X (the review) Oct 89
several midi articles in June 89

Dear *AUI,*

I have a Commodore 8296D Computer but unfortunately no knowledge of the disk required. Would you pleas forward any information on this subject and also the address where I might obtain an instruction manual.

Mr R.T. Allen

Dear R.T. Allen,

From memory you have one of the old super PETs computers. They are very nice machines but a little dated now.

The disk drives are CBM IEEE 488 units, such as the 4040, about the only place you will find any information about these computers is ICPUG. See their advert in issues of ***AUI.***

Dear *AUI,*

I read with interest your review of the Star LC 24 - 200 Colour printer. This persuaded me to purchase such a machine to use with my 1 meg Amiga and Deluxe Paint II. However I find I cannot access the high resolution 360 dots pre inch at 24 bit hex output using 8 colours available on the screen. I presume that I need an appropriate driver program for Deluxe Paint and would be grateful if you could advise on how to get one. I would welcome any suggestions re software which would meet my requirements to produce detailed engineering drawings with some information in print which offers very high resolution printing in colour, or should I have bought another sort of printer for this purpose. Thanks for an excellent magazine supporting serious users of the Amiga.

Alped Borg, Lancs

Dear Alped,

Firstly read the instruction manual very carefully, If it says that you cannot print adjacent dots in the high resolution mode that will mean that you cannot get the full 360 dpi resolution out of the machine in that mode.

That is a very common thing to do, and it does not make any real difference to the printout, as when in high resolution mode many printers will overlap their dots anyway, and so the extra resolution will be lost.

Printer drivers are a big problem, and as far as I know the Star has no exact driver as yet, it will take some time for someone to write one. There is a utility called PrtDrvGen in the PD market, but that will only create 1.2 drivers and it is a bit limited. Other than that the source code for the Epson drivers is in the RKM manuals and it should be possible to create your own drivers from them, assuming that you are fairly good at C programming.

The engineering drawing is another matter. There are two packages that you might like to look at. The first is Introcad; now this does work in colour, but it does have its own special drivers, as you might run into the same problems as with the existing lack of a driver.

The other package to look at is X-Cad. That is a full featured drawing package and it will produce a good output, again beware of driver problems with it. It only has a standard Epson driver that does a halfway reasonable job. I use it with a PD utility called PLT this converts a printer into an HPGL plotter, and a very good job it does indeed. You could set up various pens in different colours quite easily using that.

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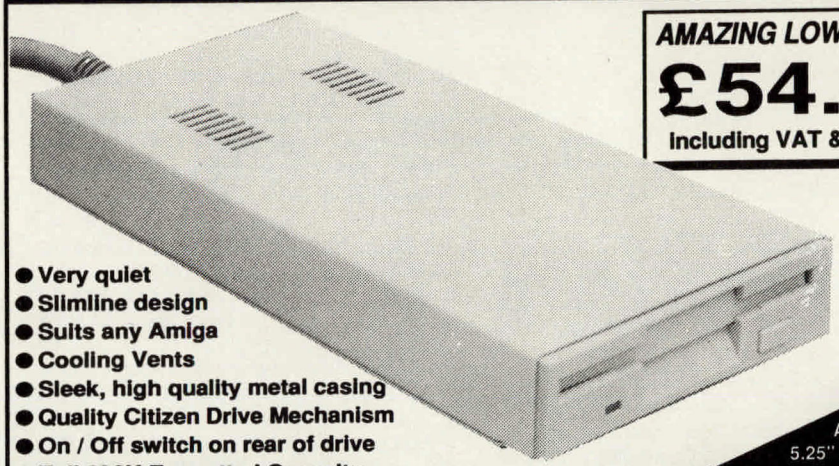
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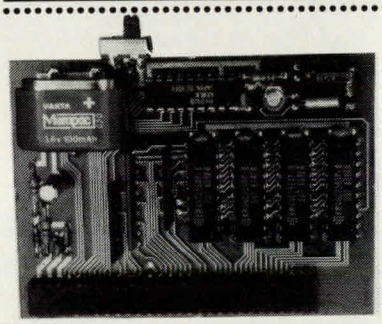


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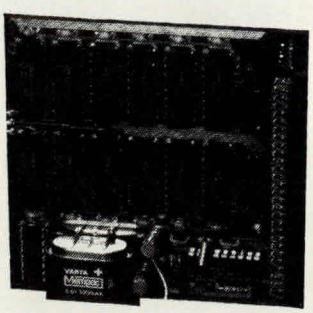
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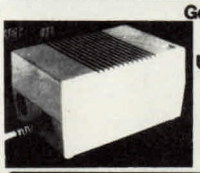
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Dear AUI,

Wow did I get a treat in last month's ***AUI***. In Newsfile, page 12 I was amazed to see the two "Sexy Jigsaw" screenshots - what a pair! But, wouldn't it have been nice to have larger pictures. A suggestion I have is for ***AUI*** to feature a nude demos page, on page 3 perhaps? There are plenty of these degrading and titilising pictures floating around, especially in the PD libraries. And maybe readers can send in there own?

On a somewhat more serious note may I say that the second opinion that accompanied both the 3-D Professional, and the Caligari reviews was a welcome change. It is great to get an expert opinion on a product, but to get two is superb. I have seen this multi-review format in games magazines, but never before in a professional product.

Jack Bulme,
Derby

Dear Jack,

Certainly not! The pictures shown reflected the product and gave an insight to what we were reporting. We always try to include photographs on all of the news where possible.

The second opinion idea came to us in a flash of inspiration and long may it continue. It certainly offers two differet users opinion of the same piece of software.

Although we will not, in the forseeable future, be taking you up on your suggestiona of a nude demos page. It would be sexist and probably very sexy - we don't want you getting overexcited to say nothing of our Art Editor who would have to examine the pics close up! You win the special prize for highlighting this topical issue.....Nevertheless....

Dear AUI,

Something has been bothering me for several months now, and I think it's time that I get this out in the open once and for all.

The subject is sex in magazines. Yes, blatant pornography. While other lesser magazines may resort to this sort of cheap trick in their efforts to woo youngsters and Sun readers I did not expect to see the likes of what I saw in March ***AUI***, Newsfile page 12 - not in my lifetime anyway. Is there any reason for this outrage. Did you have nothing better to fill the small space occupied by the offensive pictures, which could have been better filled - even with a blank space. I am outraged and disgusted and I expected better.

William Perry,
St.Albans

Don't be prudent, William Perry. There is nothing wrong with the female form (or the male either). Why is it okay have paintings of nudes or scantily-clad classical poses on people's walls even in Victorian times, but not photographs now? Evil, live beauty, is in the eye of the beholder.

Mr A.E. Cann, writes in with a suggestion or two for Mr Reynolds and Mr Holdsworth (re. *AUI* Jan 91)

To set up the Star printer he should use the install printer utility that is on the workbench disk and follow the prompts, and after inserting the extras disk select EpsonX or CBM-MPS-1250 pressing return will put the printer into preferences where it can be called up.

I use POSSO disk boxes and twinlock boxfiles to keep all those small manuals in.

Dear AUI,

I was hoping that you may be able to help me, I am currently operating as a freelance Amiga artist and I am interested in producing graphics for the games industry, whether it be the start-up animations many games now carry or the actual backgrounds and figures themselves.

Do I need any special equipment or software? I currently use an Amiga 2000 plus various off-the-shelf animation and graphics packages. Do the companies producing the games have internal departments creating this work, or is freelancing common practice?

Any information you have would be of greatest interest or maybe you could put me in contact with someone else.

Mark Greenway,
Lichfield

Dear Mark,

The software industry, as a whole, is hard to get into, and once inside many feel as though they shouldn't have bothered for the work is not as attractive as it seems and the rewards are little.

But, if you are sure this is what you want to do I can offer a little assistance which will be enough to start you off - the rest is up to you and it's all uphill.

What you need to produce graphics for software houses is Deluxe Paint II or III. That's all. The latest version is best and will allow you to create animations much more easily. There are also some useful utilities in the PD which can convert IFF to raw data format. This raw format is what programmers use, but most have written their own utilities to take IFF graphics and convert them into the form they need. Programmers usually tell graphic artists what size, frames, and number of colours they want in a graphic and the artists is left to produce these. So it is not neccessary for artists to be in-house, although software companies may prefer them to be, merely for controlling projects - some freelancers can be dosile when it comes to deadlines.

Development houses usually are responsible for producing most of today's volume software and it may be an idea to approach these. Their names and addresses can be supplied by Project Managers of software houses, who know who, how, and where their products are being

produced.

The best policy is to send off your work to the project managers and development houses. If you are lucky they may just have the job for you, and that will give you a foot in the door. Good luck, and remember that ***AUI*** *publishes Amiga Art which is of good standard.*

Dear AUI,

After reading your preface in the Feb '91 issue, I felt I must write to let you know that I agree totally with your views.

In fact, I could have not put it better, so why is it that the Amiga has such a large userbase and only one or two genuine user publications? The format of your publication is very good (even though QUAD is a bit sporadic) please don't lower your standards to become just another games review comic.

Mr C.W.Cannon,
Romford

Dear C.W.Cannon,

The reason that there are only one or two genuine user publications is that they are much harder to produce than mere games publications. Reviewing hardware and serious application software is harder than reviewing games because of the greater knowledge required to provide a suitable conclusion. Many kids review games in the games-only publications and in general they are easier to find than people who are knowledgable on user topics. It also seems that the market has not yet developed for a magazine without games, everyone wants a bit of something and who are we to disagree?

Dear AUI,

Hi, I've been reading your magazine ever since I bought my Amiga A500 and felt that it was about time that I actually wrote to you guys - it seems to be the thing to do these days! (Especially when there's £50 up for grabs - Ed.)

Firstly, let me say that I am totally amazed at what this remarkable machine can actually do. I am a Mechanical Engineering student at King's College London and am therefore very interested in CAD (Computer Aided Design). I use a really sophisticated CAD package called XCAD-Professional (superb). CadVision are actually bringing out a 3-D package, XCAD-3D! I certainly hope you will feature a full review of this, as well as the newly updated XCAD- Professional which is also set for an imminent release date. I'd like an expert opinion on these products.

I am interested in obtaining the Fortran programming language. Could you tell me where I may get such a package?

On a more serious note, I ordered, and received, a A590 hard disk-drive from a well-known advertiser — Diamond Computers. It was for a Xmas present and when it was delivered it was missing some essential parts and the warranty seal was already broken. I rushed out and bought another from a computer shop, thinking that I would get my money refunded for the faulty unit. The manager at Diamond refused to refund all of my money, and wanted to keep 20% (£80) due to a restocking fee! I am in the process of geting my money back, in full, through lawful means. This re-inforces your advice that cheapest is not always the best and afterall, service is everything. I've certainly learned from my mistake and hope that some of your readers will to.

A.Kayani,
London

Dear A.Kayani,

Funny old world isn't it? We are in the process of researching CAD packages for a special feature in a future issue. If you are using CAD on a professional basis you may wish to contact us, we always look out for intresting contributions from our readers, many of whom are professionals in their own right and have found interesting uses worth featuring.

The only version of Fortran I know about is Absoft's version. Unfortunately I don't have a contact for them, can any reader help? There may also be a version in the PD.

We contacted Diamond (London Branch) who assured us that they would give you a full refund if you provide prooof of purchase of a new unit. Their full reply was:

Diamond's reply

Yes, Mr Kayani did buy a A590 hard disk.

Yes, Mr Kayani did ask for his money back.

Yes, Mr Kayani was told that there would be a restocking charge;

But this is where the story unfolds.

We were contacted by the customer after Xmas, and informed of this problem.

We were told by the customer that he had gone to our shop in Manchester — (He was quite insistant) He was told by the Manchester branch that the unit could not be replaced, so he said he bought a new unit.

On checking with the Manchester branch there was no record of any purchase under tht name on that product on the day in question.

After confronting Mr Kayani with this information he then informed un that it was another store in Manchester. In trying to be fair we told Mr Kayani that if he would like to come in with the receipt of the unit he purchased from this store, we would give him a full refund.

We can only go on to quote the old proverb —

"You can please some of the people all of the time or all of the people some of the time, but not all of the people all of the time."

We have had a letter from Eduardo de Oliveira Lima of Sao Paulo in Brazil. The trouble is our Portuguese is not so hot! And his is fluent. He does say 'I love the Amiga and I like Amiga User International!' but that is apparently the extent of Eduardo's English!

However, our Portuguese does seem to indicate (unreliably) that 'gostara de me communicar con otras usarios de Amiga' probably means 'I'd like to communicate with other Amiga users' and he goes on, we believe, to ask to have his name and full address published. So if you are interested the address to write to is:

Eduardo de Oliveira Lima, Rua Maria Saline Romeu 601, Pirutuba, Sao Paulo-SP. Brazil, 05159

It may help you improve or learn Portuguese!

P.S. We think he may also have written that his A500 has been stolen and he wants to earn £1000 to buy a new one by giving ELSPA (the games company association) and CBM a list of their pirated games in Brazil. But as we said , our Portuguese is lousy so maybe his letter doesn't mean that at all! But good luck Eduardo!

That's it for this month, but keep sending your letters in, you could win £50 worth of Amiga software and hardware.

(continued from page 32)

use the printer device. So, programs like "Deluxe Paint", "DigiPaint" or the Workbench utility "GraphicDump" can benefit from "TURBOprint"'s abilities.

But, in addition to this, there are some functions that can be activated by certain key combinations: you may print the screen or save it as an IFF picture, switch between several screens, or call the "TURBOprint" menu screens to change the preferences. Since "TURBOprint" is resident you can even use it to create print-outs of your favourite games which do not support multitasking.

"TURBOprint Professional"

If all these options and possibilities aren't enough for you then take a look at the latest and best "TURBOprint" version: "TURBOprint Professional"

"Once the preferences are set and the program is started, it works quietly in the background and improves and speeds up all printer activities that normally would use the printer device"

which costs about #63. This program has all the features of its predecessor and some strong new abilities which can be controlled on four preferences screens:

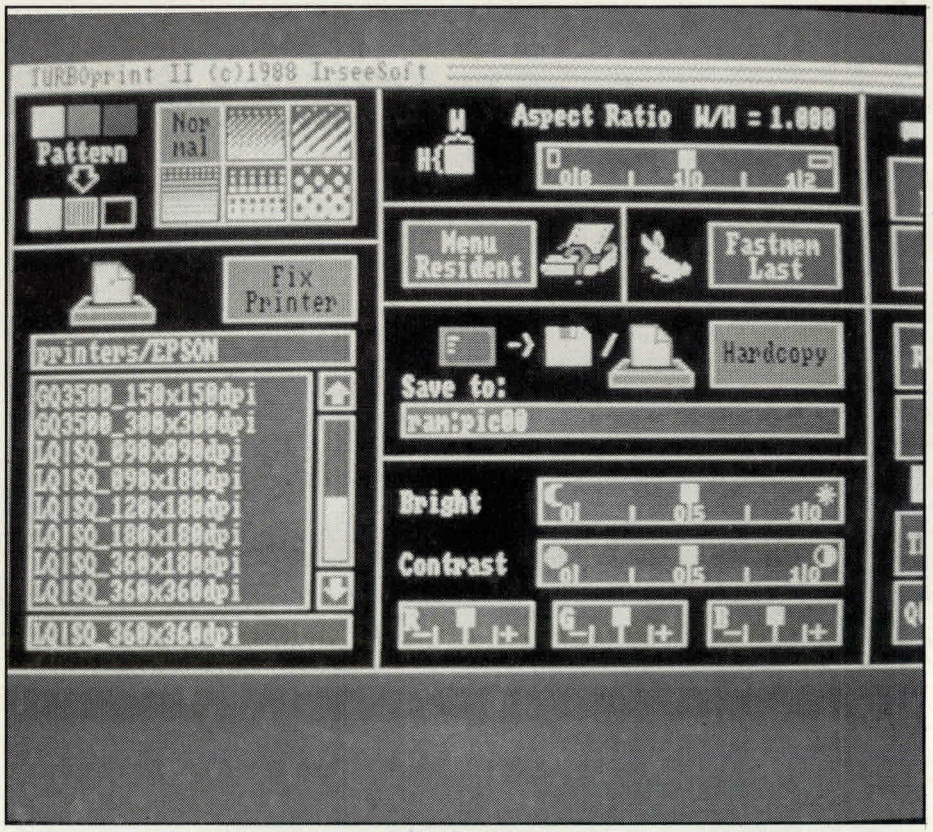
"TURBOprint Professional" offers fourteen instead of six patterns which can be used to convert colours to shades of grey.

The anti-aliasing function has been improved and now also smoothes lines which are not exactly diagonal. This is a great help if you use a word processor that prints its fonts in the graphic mode.

A new print mode deletes the disturbing horizontal stripes which every owner of a 9-pin printer knows and hates.

"You can even separate the four colours black, yellow, magenta, and cyan to create plates for offset printing"

Problems with the brightness or the contrast of a print-out can be solved with the gamma correction which lets you influence the brightness relation between the different colours respectively between the shades of the grey scale. This may not sound overly exciting, but believe me: once you have seen two print-outs of the same picture with and without gamma correction, you know what this option is worth.



This is the second preferences screen of "TURBOprint II". The program gives you more control over your printer than the Workbench preferences.

If you own a colour printer, you undoubtedly have noticed that the colours on the paper in most cases do not match the colours you see on the monitor. "TURBOprint Professional" allows you to adjust the colours of the print-out with four predefined (matrix I, matrix II, ink, thermo) and three user-definable settings.

You can even separate the four colours black, yellow, magenta, and cyan to create plates for offset printing.

Other new features are the possibilities to mirror a print-out (should the necessity arise) and to tell the program how many copies of a print-out you want.

"All this makes "TURBOPrint II" (or 'TURBOprint Professional', if you can afford it) a real must for all Amiga users"

The poster mode allows you to print pictures that consist of up to 64 normal sheets of paper. (This is great if you are bored with the pictures on your wall - or even with your wallpaper.)

"TURBOprint Professional" has printer drivers not only for matrix printers but also for laser, ink, and thermo printers.

Conclusion

"TURBOprint II" is easy to use and a great improvement upon the original printer drivers from the Workbench. "TURBOprint Professional" is even better and has some features that are particularly useful if you use a colour printer or a cheap 9-pin printer. Even with the latter you can produce print-outs of a quality you never dared dream of. All this makes "TURBOPrint II" (or 'TURBOprint Professional', if you can afford it) a real must for all Amiga users who want to or have to print graphics.

H. S.

Product: ***TURBOprint II***
Price: ***£33***
Product: ***TURBOprint Professional***
Price: £63
Contact:
IrseeSoft
Schlachtbichl 1
8951 Irsee
Germany
Tel: (0 10 49) 83 41 / 7 43 27

AMIGA



ST



PC



Actual Digitised colour screen - shots

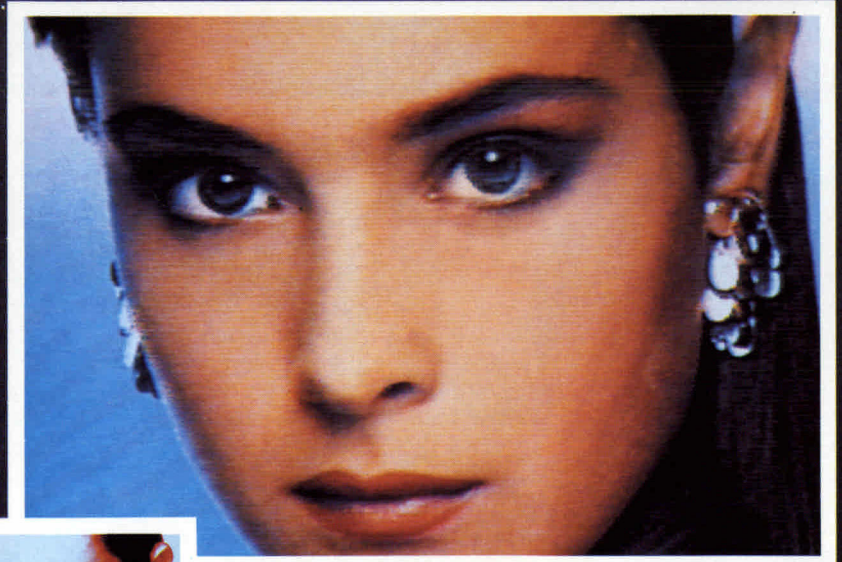
VIDEO COLOUR SPLITTER



£79.95
(inc VAT) including power supply

Vidi-RGB is an electronic filter which takes a colour video signal and separates it into the three primary colours (Red, Green and Blue) allowing each to be digitised.

Ideal for use with Vidi-Chrome & Frame Grabber or Digi-View Gold (By Newtek).





★ For use with colour Digitisers replacing conventional Filter sets.

★ Our Vidi - Chrome switches Vidi - RGB automatically grabbing full colour pictures in less than one second.



★ Digitise full colour images direct from home VCR (must have perfect freeze frame)

★ Digitise outstanding colour pictures direct from Canon's new Still Video Camera (an example shown on cover)



★ Manual switching for maximum flexibility.

★ Fully compatible with Digi - View Gold.

All these pictures are **actual unretouched screen-shots** illustrating the sequence of creating a full colour image using Vidi RGB, Vidi-Chrome and Vidi Amiga.

Limited

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Tel: 0506-414631
Fax: 0506-414634

Just The Facts:

What Makes Digi-Paint 3 the Ultimate Paint Program?



"Finding the best paint program for your Amiga can be confusing, but once you have the facts it's simple."

Laura Longfellow
Sales Manager
NewTek Inc.

"Why is Digi-Paint 3 better than DeluxePaint III™?"

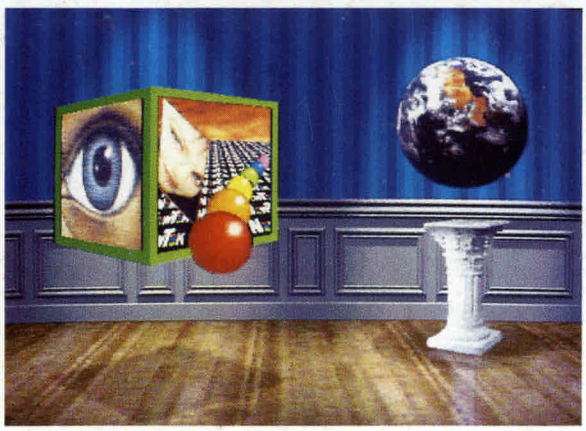


Digi-Paint 3 works in the Amiga's powerful Hold And Modify (HAM) mode, which allows you to paint using all 4096 colors simultaneously. By comparison, Deluxe Paint III (by Electronic Arts) operates in less sophisticated modes, restricting you to a maximum of only 64 colors. Advanced features available in Digi-Paint 3 – including Colorizing, Variable Transparency, Shading, Lighten, Darken and Range Painting – are simply not possible in Deluxe Paint III due to its 64 color limitation. AMIGAWORLD warns, "Competitors may want to head back to the drawing board, because Digi-Paint 3 is hard to beat!"

"What makes Digi-Paint 3 better than other HAM paint programs?"

Digi-Paint 3 is the only Amiga paint program written in 100% assembly language. Although challenging to program (taking up to 10 times longer than other computer languages), it's the only way to achieve the incredible speed found in Digi-Paint 3. AMIGAWORLD calls it "the fastest HAM paint program yet" and AMIGA SENTRY estimates it's, "6-10 times faster" than the nearest contender.

Other advanced features found *only* in Digi-Paint 3 include: anti-aliased texture mapping, anti-aliased fonts, ARexx support, 1024 x 1024 super bitmaps with auto-scrolling and dithering to 30 bits per pixel (over a billion colors internally, giving you tens of thousands of apparent colors). COMPUTER SHOPPER magazine reports "Digi-Paint 3 is without a doubt the most advanced HAM paint program to date!"





"But is Digi-Paint 3 easy to use?"

I've learned that no matter how powerful a program is, if it's not friendly it's not worth my time. We designed Digi-Paint 3 with all users in mind – from the beginner just starting out with computers, to the "power user" who demands the most advanced features possible. The spiral-bound manual contains a step-by-step Guided Tour, 11 hands-on tutorials, a color coded reference card, and almost one hundred example photos.

Digi-Paint 3's intuitive user interface was created by Digi-View designer (and NewTek Founder) Tim Jenison and renowned Amiga artist Jim Sachs. It features innovative "Dashboard" controls which AMIGAWORLD regards as "a joy to use" and "very easy to learn and understand". INFO MAGAZINE says the new interface "looks great and works logically".





"What is the Transfer 24 program included with Digi-Paint 3?"

Transfer 24 is a separate program disk included in the Digi-Paint 3 package, allowing you to alter any picture's brightness, color saturation, contrast, hue and sharpness, almost as easily as adjusting the controls on your television set. Transfer 24 also lets you modify the size, palette, and resolution of any picture. These powerful features, known as "Image Processing", give you incredible control over your final artwork. You can also save your image in any of the Amiga's 24 resolution modes (up to 768x480) making it compatible with all Amiga graphics software. AX MAGAZINE notes that "Transfer 24 gives you even more options as to the final appearance of your work". AMIGAWORLD declares, "Transfer 24 is great for making overall changes."

For a NewTek authorised dealer near you contact **HB Marketing Ltd.** at **0753 686000.**

NEWTEK
INCORPORATED

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